CORPORATION OF GLASGOW

REPORT

OF THE

MEDICAL OFFICER OF HEALTH

CITY OF GLASGOW

1928

ORDERED BY THE COMMITTEE ON HEALTH TO BE PRINTED

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PREFACE.

This Report follows the lines of its predecessors and contains the detailed information as to the prevalence of disease and the statistical and other data statutorily required in an Annual Report. It has been customary to include in these Reports special reviews of various branches of the Department's activities and investigations of special subjects undertaken by members of the staff. For instance, the hospital position, the administration of tuberculosis, including methods of diagnosis and treatment, the use of ultra violet rays, an investigation into the cause of blindness, a review of encephalitis lethargica, the relation of measles and housing, studies of puerperal fever, investigations into overcrowding, and other matters have been incorporated in previous Reports.

Special attention has been given this year to the Section on Housing, which contains special reports on the "intermediate" house, slum clearance, &c. Owing to the very great sociological interest attaching to rehousing of tenants in connection with improvement schemes, the impressions formed by those responsible for the supervision of this procedure have been inserted in considerable detail, warranted by the importance of the subject.

There is also included a full report on the outbreak of poliomyelitis (infantile paralysis), which fortunately did not reach large dimensions. During the year a special investigation was commenced into the incidence of respiratory affections in selected areas of the city—a preliminary study of an important and difficult group of diseases. The reports of the Hospital Superintendents are incorporated, and also that of the City Bacteriologist, which records a considerable increase in the work which falls to this Department.

In the rapid and accurate preparation of the statistical tables the special method of mechanical tabulation has been of the greatest assistance. Mr. William M'Kean has again been responsible for the preparation of much of the general text and the collation of information, while Mr. J. C. Ritchie has supervised the preparation of the statistical data.

A. S. M. MACGREGOR,
Medical Officer of Health.

PUBLIC HEALTH DEPARTMENT,
GLASGOW, 12*th June*, 1929.

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REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE YEAR

1928

PART I

SECTION I.

POPULATION, &c.

The population of the City, as estimated by the Department, numbers 1,147,108 persons. The official figure of the Registrar-General is, however, 1,060,500, a difference of 86,608 persons. The explanation of this difference goes back to the 1921 census, when, owing to the industrial troubles of that year, the enumeration was delayed from May to June 19th, a period when many of the usual city residenters had gone on holiday and were to be found among the greatly augmented populations of coast and country resorts. The census then taken being clearly an under statement of the actual population, it was accordingly increased by an estimated figure of 50,000 persons calculated as the result of various considerations to represent the temporary loss of inhabitants of the City. As the calculations of population for intercensal years are based upon the previous census, this discrepancy between official and local estimates still remains, and is now a matter of considerable importance, because the grants foreshadowed under the Local Government (Scotland) Bill are based on population, so that the effect of the error which crept into the 1921 census will deprive the City of grant estimated at £13,000. Both of these estimates are based on a return by the City Assessor of the inhabited houses at Whitsunday of each year, to which is added a special census of inmates of institutions taken in midsummer, while the factor by means of which the population is then calculated is obtained from the actual population of the City at the last census.

The error which arose in 1921 has prevented the compilation of valuable detailed vital statistics, while there are certain other aspects bearing on public health which will not be satisfactorily settled until the 1931 census is taken. There has been, for instance, in recent years, a decided redistribution of the population, involving overflow from the more congested central areas to the suburbs and into the neighbouring county areas, and the next census will enable a comprehensive survey to be made of this important movement. It is essential to be able to measure with exactitude the movements of the inhabitants to the suburbs and beyond the boundary, the dispersal of population and its redistribution within the City, as well as the amount and degree of overcrowding in dwelling-houses. The census due in 1931 should record data of the utmost importance and it may be pointed out that the Local Government Bill contains a provision for a quinquennial census to be taken in future, a reform which has been often urged.

Ward Populations.—The areas of many of the peripheral wards were increased by the extension of the City in 1926, so that the population of the Municipal Wards, shown in Table I in the appendix, may be compared with the corresponding estimates for the preceding year. The differences in the wards on the outer ring compared with those in the centre of the City reflect the trend of movement of the population towards the outskirts of the City, due to the housing activities and clearance schemes of recent years. The more important changes during the year are as follows:—

INCREASES.		DECREASES.	
Whiteinch,	6,095	Kingston,	887
Shettleston and Tollcross,	2,875	Exchange,	599
Govanhill,	2,040	Mile-End,	553
Cathcart,	1.547	Gorbals,	503
Govan,	1,146	Cowcaddens,	430
Pollokshaws,	1,107	Calton,	332
Springburn,	1,031	Whitevale,	306

When compared with ward populations at last census the increases in certain wards are very considerable. Shettleston and Tollcross has now 7,736 more inhabitants, Whiteinch 18,280, Pollokshields 11,727, Provan 8,604, Springburn 7,452, and Ruchill 7,099. The decreases are considerably smaller, and in only one instance exceed 3,000, *i.e.*, Cowcaddens 3,812, while in such densely populated wards as Woodside the population is practically the same and in Gorbals the difference is only 1,265. The decrease in Calton is 1,278, Exchange 2,030, Blythswood 1,912, Sandyford 2,078, and North Kelvin 1,404.

Institutional Population.—The total number of persons found to be resident in institutions at the end of June was 32,465, representing about three per cent. of the total population of the city.

The inmates of institutions last year were 326 less than those of the preceding year, a figure composed of certain differences in the numbers of persons in poorhouses, hospitals, and Maryhill barracks, &c.

Density.—The area of the City, as extended in 1926, 29,551 acres, remains the same, but the density of the population at 39 persons per acre is one higher than in the preceding year. The highest ward increase is five in Govanhill, where the density is now 94. An increase of three occurred in Shettleston and Tollcross and Dennistoun Wards, while three other wards were higher by two.

In Mile-end and Kingston Wards the density was reduced by three, and in three other wards the density was reduced by two per acre. These changes are mostly due to the housing operations of the Corporation.

Inhabited and Empty Houses.—In Appendix Table II are shown the numbers of inhabited and empty houses in each municipal ward as at Whitsunday, 1928. The following summary gives the number of unoccupied houses during recent years as compared with the pre-war year, 1913, when there were 18,710 empty houses.

NUMBER OF UNOCCUPIED HOUSES CLASSIFED ACCORDING TO NUMBER OF APARTMENTS.

									1926			
	1913	1919	1920	1921	1922	1923	1924	1925	Old City	Extended City	1927	1928
One apart., - -	*4.169*	319	120	33	27	43	93	91	79	81	48	54
Two aparts., - -	*9.762*	181	72	17	27	55	82	76	61	62	40	27
Three ,, -	*2.731*	21	9	9	10	32	27	28	43	45	54	33
Four ,, -	*954*	13	15	8	20	32	42	21	35	36	40	46
Five ,, and up,	*1,094*	103	75	76	116	163	205	150	190	197	277	213
	18.710	637	291	143	200	325	449	366	408	421	459	373

The largest number of unoccupied houses is 52 in Kelvinside, all of which, with the exception of 9, are houses of five or more apartments, while in Pollokshields 19 of the 25 empty houses are of a similar size. In Hutchesontown there were no empty houses, and in Govanhill one, while in a number of other wards there were only two houses available.

As regards the number of occupied houses, a decrease of 190 occurs in Kingston Ward, 120 in Mile-end, 116 in Gorbals, and 110 in Exchange. Housing schemes are responsible for increases of 1,311 in Whiteinch Ward, 591 in Shettleston and Tollcross, 482 in Govanhill, and 376 in Cathcart.

Linings granted by Dean of Guild Court.—A summary of linings granted by the Dean of Guild Court since 1915 is given in Appendix Table III. The total for the year ending 31st August, 6,885, is the highest recorded for more than half a century, the greatest number granted in pre-war years being 5,746 for the year 1875-76. Of the linings granted 4,184 were for the erection of three-apartment houses, or almost 60 per cent. of the total, while 2,238 were for four-apartment houses. Only 132 linings were granted for the construction of two-apartment houses.

ABSTRACT OF METEOROLOGICAL OBSERVATIONS.

The rainfall for last year, 49·35 inches, was considerably above the average, and exceeded any previous year since 1916 (see Appendix, Table IV). This excess was mainly due to the high rainfall in January, when nearly 9 inches were recorded. Otherwise the year was rather favourable with the exception of June, when 5·51 inches fell, mostly in the early part of the month, and October, when 5·83 inches were recorded. Only 1·35 inches fell in April, and 2·16 inches in May, when many of the smaller rivers in the West of Scotland were reduced to a lower level than for many years past. The number of days on which rain fell was 255 compared with 245 during the preceding year. The maximum number in any one month was 31 in January, followed by 25 in each of the months of October and November. The lowest number was 11 days in May, followed by 16 in September and 17 in April.

The hours of bright sunshine, 1,121, were equal to the average of the preceding 10 years.

The average mean temperature was 46·8, which is the same as that for the preceding year and slightly higher than the average for the 10 years, 1918-27. The maximum was 79° which occurred in August and the minimum 20° in January.

BLIND PERSONS ACT.

(1) *Applicants for Technical Training.*—During the year 1928, 92 applications for admission to the Royal Blind Asylum for technical training were received. These were dealt with under the procedure outlined in the Annual Reports of 1926 and 1927. Of the applicants,

81 were considered to be blind persons and 11 were rejected. Accepted applicants from Glasgow included 23 men and 27 women; from other areas under the Joint-Committee there were 19 men and 12 women.

The age distribution of the accepted candidates was as follows:—

Age,	15-20	–25	–30	–35	–40	–45	Total.
Males,	14	8	3	9	6	2	42
Females,	21	5	4	2	4	3	39

The causes of blindness in these cases are indicated below:—

I.—Congenital Conditions, including Cataract—		
Congenital Cataract,	6	
Retinitis Pigmentosa,	2	
		8
II.—Infections—		
Syphilis,	23	
Gonorrhœa,	10	
Measles,	2	
Diphtheria,	1	
Trachoma,	2	
Diabetes,	1	
		39
III.—Injury,		9
IV.—Glaucoma,		—
V.—Refractive Errors,		10
VI.—Cause Unknown—		
Corneal Opacities,	2	
Cerebral Tumour and Optic Nerve Atrophy,	2	
Primary Optic Nerve Atrophy,	5	
Detachment of Retina,	1	
Keratitis,	2	
Irido-cyclitis,	3	
		15
		81

It is of interest to note that the proportion of these cases attributable to venereal diseases was 40·7 per cent., as against 37·3 per cent. of those examined in 1927.

(2) *Admissions to the Blind Register.*—During 1928 the Scottish Board of Health approved of a proposal to institute a clinic for the examination of all applicants for admission to the register of blind persons. A scheme has been prepared and the clinic will be opened at an early date.

HEALTH LECTURES.

Central Health Lectures.—During the winter 1928-29 the Corporation again co-operated with the Glasgow Burgh Insurance Committee, the Scottish Committee, and the Glasgow Branch of the British Social Hygiene Council in the organisation of lectures on health subjects of interest to the public generally. The principal course was given in the M'Lellan Galleries, and on each occasion the opportunity was taken of showing instructive films on health matters. The following are the particulars of the course, at which 5,250 people attended:—

Date.	Subject.	Lecturer.	Approximate Attendances.
Oct. 23.	"Venereal Disease Control,"	Dr. W. G. Clark, Assistant M.O.H.	1,000
Nov. 13.	"Heredity and Health,"	Professor F. A. E. Crew, M.D., D.Sc., Ph.D.	950
Dec. 11.	"The Evolution of Sex,"	Professor J. Arthur Thomson, M.A., LL.D.	950
Jan. 22.	"The City Child,"	Professor Leonard Findlay, M.D., D.Sc.	650
Feb. 12.	"The White Plague and its Conquest,"	Dr. J. A. Wilson, O.B.E., M.B., Ch. B.	700
Mar. 5.	"The Teaching of Sex Hygiene,"	Professor P. S. Lelean, C.B., C.M G., F.R.C.S., D.P.H.	1,000

District Health Lectures.—In addition to the above, two series of district health lectures were given by members of the staff. These also were illustrated by films and slides:—

In Kingston Public Hall.

Date.	Subject.	Lecturer.
Feb. 14.	"The Problem of Influenza and other Infectious Diseases,"	Dr. J. L. Halliday.
Feb. 22.	"Health and Growth of the Child,"	Dr. Margaret R. Wylie.
Mar. 1.	"Treatment of Disease by Light,"	Dr. E. S. Macphee.

Total Attendance, - - - 1,100.

In Bridgeton Public Hall.

Date.	Subject.	Lecturer.
Mar. 13.	"Insects and Disease,"	Dr. W. C. Gunn.
Mar. 20.	"Venereal Diseases—Their Serious Effects and Treatment."	Dr. R. J. Peters.
Mar. 28.	"Health and Growth of the Child,"	Dr. Margaret E. Gibson.

Total Attendance, - - - 2,000.

In addition to these lectures carried on under the auspices of the Committee, members of the staff, on about fifty occasions during the year, delivered lectures to a variety of societies and associations on health subjects. A series of talks was given during the winter 1928-29 at meetings of the Govan Fathers' Child Welfare Council.

LEGISLATION.

During the year the following Acts of Parliament and Regulations dealing directly with Public Health, or having a bearing thereon, came into operation:—

Acts of Parliament.

(1) Food and Drugs (Adulteration) Act, 1928—

Applicable to Scotland under certain specificed modifications. Deals with general restrictions and prohibitions, and with special provisions relating to milk products and margarine.

(2) Rag Flock Act (1911) Amendment Act, 1928—

Describing flock manufactured from rags.

REGULATIONS, CIRCULARS, AND MEMORANDA.

Blind Persons—

Joint-Memo, dated 10/1/28, by Scottish Education Department and Scottish Board of Health: Technical Education of Blind Persons.

Circular No. 5, dated 2/2/28: Welfare of the Blind.

Circular No. 6, dated 31/6/28: Wireless Telegraphy (Blind Persons Facilities) Act, 1926.

Maternity and Child Welfare—

Circular No. 16, dated 29/12/28: Maternal Mortality and Puerperal Sepsis.

Infectious Disease—

Circular No. 14, dated 30/3/28: Closing of Schools.

Food and Drugs—

Agricultural Produce (Grading and Marking) Act, 1928.

Public Health (Food Premises) Regulations (Scotland) Act, 1928.

No. 571: Merchandise Marks (Imported Goods) No. 3 Order, 1928. dated 13/6/28.

Fertilisers and Feeding Stuffs Regulations, 1928.

SECTION II.

VITAL STATISTICS.

In the following summary the statistics for 1927 and 1928 refer to the City as extended in May, 1926. As the added population was small, comparison with former years will not be much affected, except with regard to areas and density of population.

SUMMARY.

	1926	1927	1928
Population, ...	1,101,622	1,130,675	1,147,108
Acreage, ...	19,183	29,511	29,511
Persons per acre, ...	57	38	39
Number of Inhabited Houses, ...	241,519	247,519	251,307
Deaths—Number registered,	16,156	16,410	16,727
,, After correction for Transfers,	15,628	15,439	15,701
Births—Number registered, ...	24,857	24,020	24,187
,, After correction, ...	24,345	23,578	23,649
Death-rate per 1,000 living—All causes, ...	14·19	13·66	13·69
Birth-rate per 1,000 living, ...	22·10	20·85	20·62
Deaths under One Year—After correction, ...	2,532	2,527	2,525
Deaths under One Year—Per 1,000 births, ...	104	107	107

BIRTHS.

The births during the year numbered 23,649, compared with 23,578 in 1927. On the estimated population and corrected births, the birth-rate is 20·62 per 1,000 persons, compared with 20·85 in 1927 and 22·10 in 1926. For these years the Registrar-General estimates the birth-rate at 22·3, 22·4, and 23·5 respectively.

The birth-rate is again the lowest on record, although the reduction 0·1, is small. This reduced fertility is not confined to Glasgow, or even large cities only, but is general throughout the country.

When this subject was dealt with in the report for last year a diagram was introduced showing the natural increase in the four large cities in Scotland since the beginning of the present century.

The birth-rate in each of the municipal wards of the City is shown in Table V in the Appendix. The highest rate is 28·6 in Mile-end Ward, followed by 28·2 in both the contiguous Wards of Calton and Dalmarnock. In Kelvinside the birth-rate was as low as 7·9, followed by 9·8 in Camphill and 10·0 in Park Ward.

The following information from the Registrar-General's returns shows the birth-rates for Glasgow and Scotland since 1871:—

	Glasgow.	Scotland		Glasgow.	Scotland.
1871-1880, ...	36·6	34·9	1922, ...	27·3	23·5
1881-1890, ...	36·5	32·4	1923, ...	25·6	22·8
1891-1900, ...	33·7	30·3	1924, ...	24·1	21·9
1901-1910, ...	31·2	28·4	1925, ...	24·6	21·3
1911-1915, ...	27·4	25·4	1926, ...	23·5	20·9
1916-1920, ...	24·1	22·9	1927, ...	22·4	19·8
1921, ...	28·7	25·2	1928, ...	22·3	19·8

On the basis of local returns, the following comparison is made of the rates for several years in Glasgow and other towns:—

	1926	1927	1928
Glasgow, ...	**22·1**	**20·9**	**20·6**
Edinburgh, ...	18·7	17·9	17·3
Dundee, ...	21·9	20·4	20·3
Aberdeen, ...	21·5	20·0	20·7
London, ...	17·1	16·1	16·2
Liverpool, ...	23·3	22·2	22·1
Manchester, ...	18·3	17·1	16·8
Birmingham, ...	18·7	17·8	17·6

ILLEGITIMATE BIRTHS.

During the year there were 1,571 births registered as illegitimate, which is equal to 6·6 per cent. of the total births, as compared with 6·1 per cent. in 1927. Most of the Wards are around the average for the City, as is shown in Appendix Table V.

A more accurate comparison of the legitimate and illegitimate birth-rates is obtained when the calculation is based on the number of females of child-bearing ages; the former on married women of 15 to 44 years of age, and the latter on the unmarried women and widows of the same ages. This is given in the following table:—

GLASGOW.—BIRTH-RATES, DISTINGUISHING LEGITIMATE AND ILLEGITIMATE IN CERTAIN YEARS FROM 1871.

(Based on figures of Registrar-General).

Year	Number of Legitimate Births	Rate per 1,000 Married Women 15-44 years	Number of Illegitimate Births	Rate per 1,000 Unmarried Women and Widows 15-44 years
1871	17,118	298	1,749	27
1881	17,605	293	1,501	22
1891	18,304	283	1,553	21
1901	22,676	260	1,530	14
1911	19,966	229	1,603	14
1921	27,790	238	1,922	13
1922	26,565	227	1,733	12
1923	25,209	216	1,493	10
1924	23,844	204	1,486	10
1925	23,931	205	1,491	10
1926 (Old City)	22,895	196	1,450	10
1927	22,128	186	1,453	10
1928	22,075	186	1,575	11

MARRIAGES.

The marriage rates per 1,000 persons living in Glasgow since 1871 are given in the following table. Except for the years following the war, when the rates were comparatively heavy, the average over the whole period has remained fairly constant, around 9 per 1,000.

GLASGOW.—MARRIAGES PER 1,000 PERSONS LIVING.

1871-1880,	9·1	1920,	12·4
1881-1890,	9·3	1921,	10·7
1891-1900,	9·4	1922,	9·1
1901-1910,	8·8	1923,	9·6
1911-1915,	9·8	1924,	8·4
1916	8·6	1925,	8·5
1917,	8·3	1926,	8·3
1918,	9·4	1927,	8·5
1919,	9·0	1928,	8·7

DEATHS.

The total number of deaths registered during the year was 16,727, which becomes 15,701 after adjustment for inward and outward transfers. The death-rate is thus 13·7 per 1,000 of the population, the same as that for the preceding year, and is 0·5 less than the rate for 1926.

The death-rates for municipal wards are given in Appendix Table VI, which shows that none of the ward rates exceeded 20. The highest was 19·9 in Calton, followed by 18·1 in Mile-end and 17·9 in Exchange. The lowest rate was 9·8 in Cathcart, which was followed by 10·0 in Whiteinch, while North Kelvin, Govanhill, and Langside had rates between 10 and 11.

According to the Registrar-General's returns, the rates for Glasgow since 1881 have been as follows:—

GLASGOW.—ALL CAUSES—DEATH-RATE PER 1,000 LIVING.

1881-1890,	24·22	1921,	15·10
1891-1900,	21·53	1922,	17·20
1901-1910,	19·56	1923,	14·28
1911-1915,	17·04	1924.	16·10
1916,	15·16	1925,	14·83
1917,	15·10	1926,	15·09
1918,	16·50	1927,	14·63
1919,	16·36	1928,	14·80
1920,	15·30		

The following is a comparison of death-rates based on local returns of several large towns in Scotland and England:—

GLASGOW AND SEVERAL TOWNS—DEATH-RATE PER 1,000 LIVING.

	1925	1926	1927	1928
Glasgow, ...	**14·0**	**14·2**	**13·7**	**13·7**
Edinburgh, ...	14·5	13·5	14·3	13·7
Dundee, ...	16·7	14·8	16·9	15·1
Aberdeen, ...	13·8	13·3	13·7	14·0
London, ...	11·9	11·6	12·1	12·1
Liverpool, ...	14·1	13·7	13·9	13·2
Manchester, ...	14·4	13·2	13·8	12·9
Birmingham, ...	11·7	11·3	11·6	10·9

Transfer Deaths.—The deaths on which the above rates for Glasgow are calculated include those of persons formerly resident in Glasgow, but dying in institutions or elsewhere outwith the City. On the other hand, those dying within, but with home addresses outside, are excluded. The "inward transfers" numbered 565 during 1928, compared with 569 and 820 for the two preceding years, while the "outward transfers" numbered 1,591, compared with 1,540 and 1,348. The causes of deaths in both these groups are given in Appendix Table No. VII.

CAUSES OF DEATH.

The principal causes of death are summarised as follows:—

SUMMARY OF DEATH-RATES PER MILLION FROM PRINCIPAL CAUSES.

General Diseases—	1926	1927	1928
(*a*) Infectious, ...	1,233	1,127*	1,202
(*b*) Tuberculous—			
(1) Phthisis, ...	861	838	832
(2) Others, ...	311	301	301
(*c*) Malignant (cancer, &c.),	1,264	1,328	1,247
Diseases of the nervous system,	1,498	1,407	1,388
Diseases of the circulatory system,	2,092	2,047	2,152
Diseases of respiration, ...	2,474	2,364	2,279
Congenital defects and malformations (including premature birth),	811	773	761
Violence, ...	586	629	578
All other causes, ...	3,056	2,841	2,947
All causes, ...	14,186	13,655	13,687

*Includes Encephalitis Lethargica, previously grouped with "Diseases of the Nervous System," but excludes Diarrhœa (over 2 years) for the first time.

The death-rate has been so uniformly steady at low rates of between 13 and 14 per 1,000 of the population during the last few years that there is little room for variation in the groups of causes of death, as is shown in the above summary.

The rate for infectious diseases is higher principally because of the greater number of deaths from measles. Dipththeria was also definitely more fatal despite the fact that the incidence of the disease was considerably lower than was the case in 1927. The deaths from encephalitis lethargica were also higher, due to deaths among those attacked in previous outbreaks. Influenza, with a rate of 183 per million of the population, is only slightly higher than the rate for 1927, but is almost half that of 1926.

The death-rate from pulmonary tuberculosis is slightly lower, and the rate from other forms of tuberculosis the same as that for the preceding year.

Deaths from malignant diseases, cancer, &c., were fewer, the rate for 1928 being 1,247, compared with 1,328 for the preceding year, which, however, was the highest rate hitherto recorded. This is again referred to under age and sex distribution in a table which follows.

Deaths from diseases of the nervous system are again slightly lower, most of the decrease being due to a reduction in the mortality from cerebral hæmorrhage, 823 per million, compared with 897 in 1927, which is higher than the average of recent years.

Diseases of the circulatory system, however, are higher by 105 at 2,152 deaths per million of the population, this difference being largely due to the greater number of deaths from heart disease. The rate for this latter cause was 1,736, compared with 1,638 in 1927.

Deaths from respiratory diseases on the other hand have shown a reduction during the past few years, and this improvement was continued during 1928. The reduction, however, was mostly due to a decline in deaths from bronchitis, although the rate for all forms of pneumonia was slightly lower.

Deaths from congenital defects and malformations are again lower, and the reduction cannot be wholly ascribed to the lowering birth-rate, which is practically the same as that of the preceding year, while deaths from violence, which have been increasing over a period of years, probably with the increasing motor traffic, during 1928 were quite definitely reduced.

The number of deaths and the death-rate per million of the population are given in Appendix Table VIII.

AGE AND SEX DISTRIBUTION.

The age and sex distribution of deaths for each cause is given in Appendix Table IX. In every 1,000 deaths during 1928, 518 were males and 482 females, compared with the respective figures of 523 and 477 for the preceding year. Deaths among males exceed those of females, except at ages 5-10, 25-35, and again at ages over 75 years, as is shown in the following summary:—

PROPORTION OF MALE AND FEMALE DEATHS PER 1,000.

AGE PERIOD.

	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+	Total
Males,	93	34	19	9	6	11	12	22	37	53	83	86	53	518
Females,	68	26	19	10	6	9	12	28	34	47	64	84	75	482

There were 8 deaths from enteric fever among males, against 2 among females, 4 of the former being under 5 years of age. There is not much disparity in the deaths for each sex among the infectious diseases. Pulmonary tuberculosis is again heavier among males, with 524 deaths to 430 females, although other forms of tuberculosis were more fatal among females.

Cerebral hæmorrhage was much more fatal among females, with 549 deaths compared with 395 among males. This adverse comparison, however, is largely due to the greater number of females surviving at older ages. Males are more subject to death from nervous diseases other than meningitis, because of the higher mortality among male infants. Heart disease is responsible for the larger number of deaths among females, usually at higher ages, and the reason is probably the same as that given for cerebral hæmorrhage, but males are more subject to arteriosclerosis, there being 236 deaths among them, compared with 152 females.

Males are much more subject to ulceration of the stomach, 95 deaths occurring among them, compared with only 28 among females, while diarrhœa was the cause of a considerably higher number of male infant deaths. Appendicitis was the cause of death of a greater number of males, and so also was cirrhosis of the liver. If allowance be made for the larger population of females, deaths from acute and chronic nephritis would appear to be equally fatal.

Deaths in the immaturity group are always considerably heavier among males, there being 514 in 1928, compared with 359 for females. Violent deaths were almost twice as numerous among males, the excess occurring at almost all ages except among infants.

In the Annual Report for last year a table was introduced giving a special analysis of the sex and age distribution of deaths from cancer according to site of lesion. The table is here repeated with the totals for 1928. Whereas the deaths among males from cancer have gone up from 645 to 692, the female deaths are definitely lower, at 738 compared with 857. The deaths from cancer of the buccal cavity among males have increased from 55 in 1927 to 75 in 1928, while deaths from cancer of the peritoneum, intestines, and rectum have risen from 150 to 193. In both instances the increase has occurred mostly at the older ages, especially between 65 and 75 years.

Deaths from cancer of the buccal cavity among females have also risen sharply, but here the numbers are relatively small compared with the males. There were 9 female deaths this year, compared with 5 for the preceding year. Deaths from cancer of the female genital organs and breast together form more than one-third of the total deaths among females.

DEATHS FROM CANCER.

Males

Site of Lesion	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+	Total	Year 1927
Buccal Cavity, ...	...	...	...	...	...	...	1	...	1	11	22	28	12	75	55
Pharynx, Œsophagus, Stomach, Liver, and Adnexa, ...	...	...	...	...	...	...	1	3	22	35	93	71	29	254	280
Peritoneum, Intestines, and Rectum, ...	..	...	...	...	...	...	1	7	15	32	60	62	16	193	150
Genital Organs, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Breast, ...	...	...	...	...	...	...	...	...	...	...	...	1	1	2	1
Skin, ...	...	...	...	...	...	...	...	...	...	...	3	4	7	14	13
Other or Unspecified Organs,	...	...	...	...	...	1	2	3	7	24	43	48	26	154	146
Totals, ...	...	...	...	...	...	1	5	13	45	102	221	214	91	692	645

Females

Site of Lesion	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+	Total	Year 1927
Buccal Cavity, ...	...	...	...	...	...	...	...	...	1	1	1	2	4	9	5
Pharynx, Œsophagus, Stomach, Liver, and Adnexa, ...	...	...	...	...	...	...	1	3	10	31	69	83	35	232	267
Peritoneum, Intestines, and Rectum, ...	...	...	...	...	...	...	2	1	7	21	41	41	32	145	181
Female Genital Organs, ...	...	...	...	...	1	...	...	9	23	41	35	19	12	140	168
Breast, ...	...	...	...	...	...	...	...	3	8	40	31	19	11	112	106
Skin, ...	...	...	...	...	...	...	...	...	2	...	2	2	5	11	15
Other or Unspecified Organs,	...	1	...	1	1	...	...	1	8	17	29	22	9	89	115
Totals, ...	...	1	...	1	2	...	3	17	59	151	208	188	108	738	857

Quarterly Death-Rates.—The death-rate varies considerably throughout the year as is shown in the following statement of quarterly rates for the three years 1926-28. The rate during the second quarter has remained fairly uniform, but in 1928 the prevalence of measles and pneumonia during the early part of the year were the causes of the increase recorded.

	1926.		1927.		1928.	
1st Quarter,	16·7	Measles and Influenzal-Pneumonia prevalent.	14·3	Whooping Cough prevalent.	17·1	Measles, Whooping Cough and Pneumonia prevalent.
2nd ,,	15·1		13·5		13·4	
3rd ,,	11·0		11·2		11·1	
4th ,,	13·9		15·7	Early onset of Measles and Pneumonia.	13·1	

Deaths in Hospitals, Nursing Homes, and other Institutions.—Details of the deaths in Glasgow institutions are given in Appendix Table X, which indicates that over 30 per cent. of the total deaths registered occurred in such institutions. Table XI shows the numbers of those who had no home address dying in several classes of institutions.

Uncertified Deaths.—The number of uncertified deaths has shown a gradual decrease over many years. During 1928 the uncertified deaths recorded numbered 17, compared with 25 during 1927. Of the 5 uncertified deaths under one year of age, 3 were illegitimate infants. The following table shows the numbers for the past three years:—

GLASGOW.—UNCERTIFIED DEATHS, 1926-1928.

	Year	1926	1927	1928
Not Certified, - -	– 1 year,	6	7	5
	+ 1 year,	9	18	12

In addition to the above, there were 15 inward transfer deaths noted as uncertified. 13 of these were violent deaths.

SECTION III.

MATERNITY AND CHILD WELFARE.

INFANT MORTALITY.

The infant mortality rate is again 107 per 1,000 births, the same as that for the preceding year. This is not a satisfactory figure and is somewhat higher than that of most other large towns. The rate is made up of very dissimilar component parts comprising groups of affections of different origin fostered in different ways. The first few days of life have a mortality due mainly to very difficult and refractory causes, classified under the generic term of immaturity, which shows no tendency to decline. During the first year of life infections play the heaviest role, and while diarrhœal diseases have greatly declined in incidence, affections which attack the lungs still cause a high proportion of the fatalities. Indeed, comparison with other cities and between different parts of Glasgow throw this group into bold relief as the main cause of the differences in child mortality. According to the reports of the Registrar-General, diseases of the respiratory system increase in prevalence and severity from south to north of Great Britain. The more northerly the latitude the greater the problem. Again the close contact of child with child renders the spread of measles and whooping-cough easy and progressive among young children. The problem of preventing these diseases or minimising their consequences is one of extraordinary difficulty involving high standards of mothercraft associated with improved housing conditions apart from the application of any specific measures for dealing appropriately with individual patients. Further studies are being devoted to this important aspect of infant mortality.

The number of deaths of infants under one year during 1928 was 2,525, compared with 2,527 during the preceding year. The deaths under one year in each Municipal Ward of the City during 1928, with the relative rates per 1,000 births, are contained in Appendix Table XII, with a comparison of the rates during the two preceding years.

The following tables show (1) the infant death-rates in Glasgow since 1891; (2) the rates in other large towns; and (3) the death-rates among legitimate and illegitimate children per 1,000 births in each group.

GLASGOW—INFANT DEATH-RATE DURING SEVERAL PERIODS.

	Per 1,000		Per 1,000
Average of 10 years, 1891-1900,	149	1926, ...	104
,, 10 ,, 1901-1910,	135	1927, ...	107
,, 5 ,, 1911-1915,	134	1928, ...	107
,, 5 ,, 1916-1920,	115		
,, 5 ,, 1921-1925,	107		

COMPARISON WITH SEVERAL LARGE TOWNS.

	1926	1927	1928
Glasgow, ...	**104**	**107**	**107**
Edinburgh, ...	80	80	75
Dundee, ...	103	138	102
Aberdeen, ...	96	105	94
London, ...	64	59	67
Liverpool, ...	104	94	94
Manchester, ...	87	86	91
Birmingham, ...	73	75	65

GLASGOW.—DEATH-RATE PER 1,000 LEGITIMATE AND ILLEGITIMATE BIRTHS.

	Legitimate	Illegitimate		Legitimate	Illegitimate
1899-1900, ...	144	286	1923, ...	85	163
1901-1910, ...	126	257	1924, ...	115	182
1911-1915, ...	127	217	1925, ...	99	157
1916-1920, ...	110	175	1926, ...	101	157
1921, ...	102	163	1927, ...	105	147
1922, ...	116	181	1928, ...	102	176

There were 1,458 deaths of male infants and 1,067 deaths of female children during the year, compared with 1,432 and 1,095 respectively for the previous year. The infant mortality rate for males was 120 and for females 93, while the ratio of male deaths was somewhat higher at 129 to 100 female deaths, compared with 125 for 1927. This difference between male and female rates is a constant feature of infant mortality.

Causes of Infant Mortality.—The causes of infant deaths according to sexes and for each month during the first year of life are given in Appendix Tables XIII and XIV. About 37 per cent. of the male deaths and 35 per cent. of the female deaths occurred in the first month of life. Nearly half of these early deaths are due to premature births.

As is shown in the summary of the totals of the principal groups of causes of infant death in Tables XIII and XIV, which is given below, with a comparison for previous years since 1916, the death-rate from causes in the immaturity group have shown little reduction, the rate varying in the case of males from 36 to 46 and for females from 27 to 37.

Causes of Death.	Average	Rate per 1,000 Births.							
	1916-20	1921	1922	1923	1924	1925	1926	1927	1928
Males—									
I. Immaturity, ...	46	41	40	36	42	41	44	39	45
II. Diseases of Respiratory System,	27	22	43	20	39	30	29	36	28
III. Diseases of Digestive System,	18	21	12	12	14	15	15	17	17
IV. Diseases of Nervous System,	8	7	7	7	6	8	8	6	7
V. Tuberculous Diseases, ...	3	3	2	3	3	2	2	1	2
VI. Infectious Diseases, ...	11	14	17	13	17	13	11	14	15
VII. Suffocation, ...	—	—	1	—	—	—	—	1	—
VIII. All other causes, ...	10	9	12	8	9	9	9	5	7
All Causes, ...	123	117	134	99	130	118	118	119	120
Females—									
I. Immaturity, ...	36	36	34	31	31	27	29	37	33
II. Diseases of Respiratory System,	21	16	29	16	29	20	23	24	23
III. Diseases of Digestive System,	14	15	9	8	11	10	13	10	11
IV. Diseases of Nervous System,	6	5	5	4	5	4	4	4	4
V. Tuberculous Diseases, ...	3	2	2	2	1	1	1	1	2
VI. Infectious Diseases, ...	11	12	16	12	17	14	10	14	14
VII. Suffocation, ...	—	—	1	—	1	1	1	—	1
VIII. All other causes, ...	9	6	9	6	9	6	7	5	5
All Causes, ...	100	92	105	79	104	83	88	95	93
Ratio—Males to 100 Females, ...	123	127	127	125	125	142	134	125	129

Diseases of the respiratory system were lower in their fatality among both sexes, the male rate being reduced from 36 in 1927 to 28 in 1928 and the female rate from 24 to 23. The death-rate from diseases of the digestive system was slightly higher for females, while the male death-rate from diseases of the nervous system was 7 per 1,000 births as compared with 6 for the preceding year.

The death-rate from tuberculous diseases in both sexes is higher in 1928 than in the preceding year. This is the first adverse movement in these rates since the special analysis of infant deaths was instituted in 1903. In Appendix Tables XIII and XIV pulmonary tuberculosis has this year been separated out from other forms and shows that there were 7 male deaths and 3 female deaths from this form of the disease. Abdominal tuberculosis was responsible for 4 male deaths and 5 female deaths, compared with 2 and 3 respectively for the preceding year, despite the fact that the death-rate at all ages from this form of the disease is lower than in 1927.

The infectious diseases are an important cause of infant mortality, the death-rate varying more or less with the prevalence of measles and whooping-cough. In 1928, measles was present in epidemic form in the early months of the year and whooping-cough was more or less prevalent throughout the year, with a decrease in incidence towards the close of the year. Details of the increased prevalence of diseases of the central nervous system and especially poliomyelitis are given in the next section of this report, and children under one year have not escaped, as 25 male deaths and 13 female deaths were classified as due to meningococcal meningitis, these numbers being in excess of the corresponding figures for 1927.

Comparison with Other Towns.—The following comparison based on a classification of the infant deaths in Birmingham, Liverpool, and Manchester, gives some idea of the component parts of the mortality rates in these towns:—

	Rates per Thousand Births for 1927			
Cause	Glasgow	Birmingham	Liverpool	Manchester
Immaturity,	37·9	34·4	31·8	32.5
Diseases of Respiratory System,	30·0	15·8	25·9	20·3
Diseases of Digestive System,	13·4	10·6	15·2	10·7
Diseases of Nervous System,	4·9	2·7	3·7	4.7
Tuberculous Diseases,	1·5	1·2	1·3	1·0
Infectious Diseases,	14·0	3·7	7·7	8·7
Syphilis,	0·4	0·3	0·7	0·6
Overlaying,	0·4	1·4	0·7	0·3
Other Violence,	0·5	*	*	0·4
All Other Causes,	4·1	5·2	6·6	6·7
Totals	107·2	75·3	93·6	85·8

* Not included in list given in Annual Reports.

The greatest difference in the mortalities is in respect of infectious diseases, the rate of 3·7 in Birmingham being little more than one-fourth that of Glasgow which has a rate almost double those in Liverpool and Manchester. Diseases of the respiratory system are also definitely lower than the rate in Glasgow, which is almost double that of Birmingham. Diseases of the immaturity group are also somewhat more fatal in Glasgow. The essential difference in environment is that the housing conditions in Glasgow are such that there is much more intimate contact of child with child.

Infant Mortality in Wards.—This information is contained in Appendix Table XII, which shows that the ward infant mortality rates vary from 37 in Cathcart to 161 in Calton, from 48 in Camphill to 157 in Mile-End. Other high rates were 140 in Exchange and 135 in Whitevale. Calton, Mile-End, and Whitevale are contiguous wards in the east end of the City, and in view of their high infant mortality rates during 1928, a comparison of the principal groups of diseases is shown in the following summary:—

	Calton	Mile End	Whitevale	City
Immaturity, ...	38	49	57	38
Diseases of Respiratory System, ...	56	42	34	25
Diseases of Digestive System, ...	26	28	26	14
Diseases of Nervous System, ...	8	4	2	6
Tuberculous Diseases, ...	5	8	3	1
Infectious Diseases, ...	18	12	10	15
Syphilis, ...	1	3	—	1
Overlaying, ...	3	1	—	1
Other Violence, ...	—	—	—	1
All Other Causes, ...	6	10	3	5
Totals, ...	161	157	135	107

The disparity in the immaturity rates is generally due to the greater mortality among infants in these wards from congenital causes. Diseases of the respiratory system and digestive system are both very much higher in the three wards, the rate in Calton being double that for the City. Infectious diseases in Calton and Mile-End were also more fatal because of measles and whooping-cough, despite the fact that the epidemic of measles had already passed to other parts of the City towards the end of the previous year.

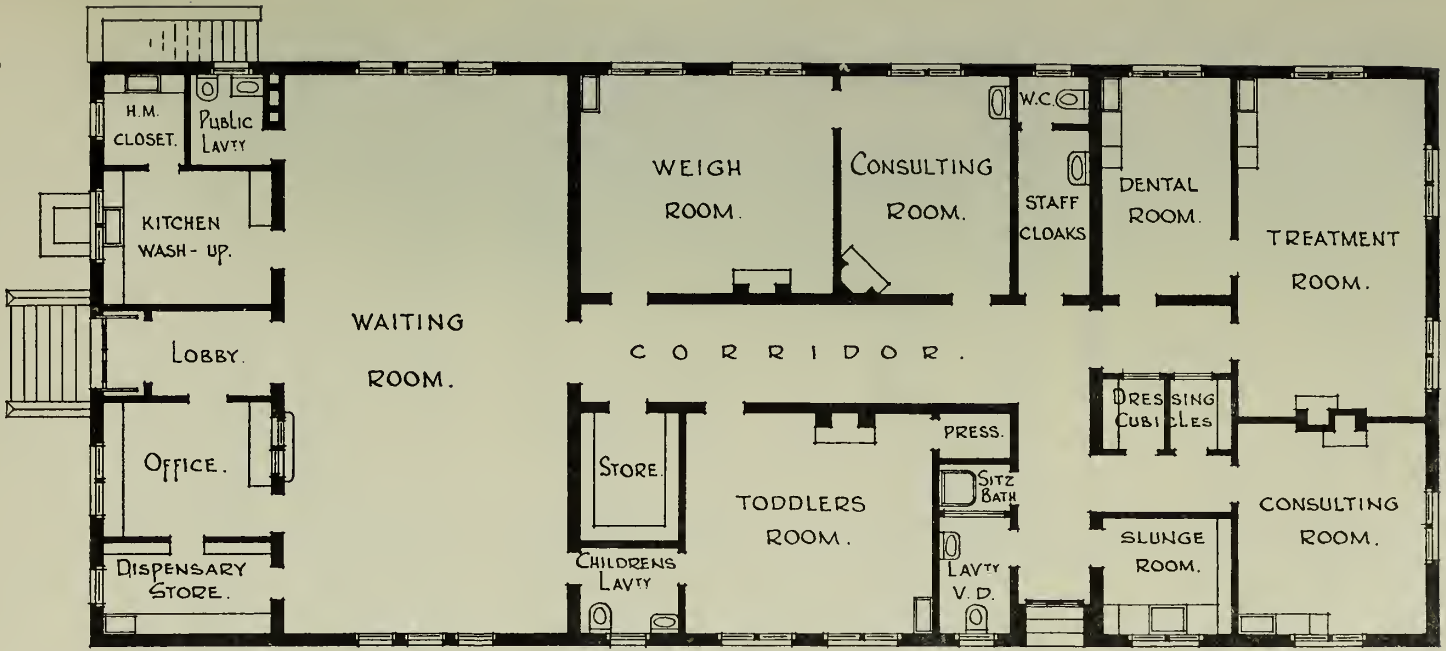
CHILD WELFARE SCHEME.

The process of replacing inadequate Child Welfare Centres by more suitable premises progressed a step further during 1928 when the Child Welfare Committee approved of the erection of a new Centre in Anderston district.

The building will be situated in ground between Richard Street and William Street, Anderston, which has been cleared of slum tenements, and will cost approximately £4,500. The accommodation provided, as shown on the plan on the opposite page, is somewhat similar to that of the other Centres which have been built during the past few years.

The plan shows a waiting-room, 40 feet by 20 feet, entered from the court at the corner of Richard Street and Paterson Street by a lobby, 6 feet wide. On either side of the lobby, and entered from the waiting-room are a 12-foot by 9½-foot office, with dispensary, and a 12-foot by 11-foot kitchen, wash-up with maids' closet and public lavatory.

To the west side of the waiting room there is a corridor, 7 feet wide, with clerestory windows which open for ventilation. Access is gained from the corridor to the weighing room, 18 feet by 16 feet, and consulting room, 16 feet by 12 feet, which rooms are in direct communication with each other. At the end of the corridor are the staff lavatory and the dental room, 16 feet by 9 feet, with direct access to the treatment room, which is 24½ feet by 13½ feet.



⌗ ANDERSTON CHILD WELFARE CENTRE ⌗

On the other side of the corridor there is a passage to an emergency exit in Richard Street from which access is gained to the consulting room, measuring 15 feet by 13½ feet, and dressing rooms, slunge room, venereal diseases lavatory, &c., and on the opposite side of the corridor to the weighing room is the toddlers' room, 16 feet by 17½ feet, with children's lavatory.

No clinic has so far been established in Nitshill district. The work has been overtaken by home visitation by a nurse, and, where medical attention is required, a visit is made by a doctor from the Department.

NOTIFICATION OF BIRTHS.

The number of notifications of births received during 1928 is shown in Appendix Table XV, compared with the corresponding figures for the two preceding years. As notifications include still births, the notifications are always in excess of the number of births registered. Omissions to notify births in terms of the Act average around 2½ per cent., but most of these are formally intimated after attention has been directed to the omission.

Nature of Attendance at Births.—The proportion of births medically attended fell from 48·6 per cent. in 1914 to 40·1 in 1925. In 1928 the proportion was 43·7.

Still-Births.—The number of still-births known to occur in Glasgow usually averages about 4 per cent. of the total births. During 1928 there were 1,042 still births, equal to a rate of 4·2. Of the medically attended births there were 241 still-births among home cases, representing a rate of 3·5, and 405 in institutions, equal to a rate of 10·3. Together the rate indicated is 6·0. Among non-medically attended births there were 396, which is equivalent to a rate of 2·8.

WORK OF MATERNITY AND CHILD WELFARE CENTRES.

As is the case in Nitshill, the visitation in Yoker district has been overtaken during the year by home visitation by one of the medical staff since the clinic there was discontinued in 1927. During 1928, 260 visits were paid to 188 infants, all but 10 of which were undertaken by a doctor. Only one alteration was made during 1928 in the list of clinics which was in operation at the end of the preceding year. The additional consultation arranged was one on Friday mornings at Shettleston, which is included in the following revised list :—

LIST OF MATERNITY AND CHILD WELFARE CLINICS.

	9 a.m.	1.30 p.m.
Monday,	1 Maxwell St., Partick (Ante-natal). Church Hall, Garngad Hill. 106 Orr Street (1·5 years). 130 Adelphi Street, S. 132 Weir Street. 2 Summerton Rd.. Govan (Ante-natal).	20 Cochrane St. (Ultra-Violet Ray). 1 Maxwell Street, Partick. 60 Avenuepark Street. 106 Orr Street. 130 Adelphi Street, S. 132 Weir Street. 2 Summerton Rd., Govan (Ultra-Violet Ray).
Tuesday,	77 Port Street (1-5 years). Church Hall, Garngad Hill. 60 Avenuepark Street. Wellshot Road, Shettleston. 132 Weir Street. 2 Summerton Rd., Govan.	77 Port Street. 194 Campbell Street, Springburn. 614 Dobbie's Loan (Ante-natal). 106 Orr Street. Wellshot Road, Shettleston. Elder Park Centre (Ante-natal).
Wednesday,	20 Cochrane St., (Ultra-Violet Ray). 77 Port Street. 60 Avenuepark Street. 106 Orr Street (1-5 years). Wellshot Road, Shettleston. 130 Adelphi Street, S. 2 Summerton Rd., Govan (Ultra-Violet Ray).	20 Cochrane Street. 1 Maxwell Street, Partick (1-5 years). 194 Campbell Street, Springburn (Ante-natal). 614 Dobbie's Loan. 106 Orr Street. 130 Adelphi Street, S. (Ante-natal). 2 Summerton Road, Govan.
Thursday,	20 Cochrane Street (1-5 years). 1 Maxwell Street, Partick. 614 Dobbie's Loan (1 5 years). 106 Orr Street (1-5 years). Wellshot Road, Shettleston. 130 Adelphi Street, S. (1-5 years). 132 Weir Street.	1 Maxwell Street, Partick (1-5 years). 60 Avenuepark Street (Ante-natal). 614 Dobbie's Loan (·1 year). 106 Orr Street. Wellshot Road, Shettleston (Ante-natal). 130 Aldephi Street, S. 132 Weir Street. 2 Summerton Road (Ante-natal).
Friday,	194 Campbell Street, Springburn. 614 Dobbie's Loan (1-5 years). 106 Orr Street. Wellshot Road, Shettleston. 130 Adelphi Street, S. (1-5 years). 2 Summerton Road, Govan. Elder Park Centre.	20 Cochrane St. (Ultra-Violet Ray). 1 Maxwell Street, Partick. 194 Campbell St., Springburn. 614 Dobbie's Loan. 106 Orr Street (Ante-natal). 2 Summerton Road, Govan (Ultra-Violet Ray). Elder Park Centre.

Maternity Hospital Ante- and Post-natal Clinics—Daily, Monday to Friday, at 1.30 p.m.
Vaccination is also done at 20 Cochrane Street on Tuesdays at 12.30 p.m.

The number of Centres remains the same, thirteen in all, at which are held weekly 68 consultations, 10 of them being ante-natal clinics, 52 infant consultations, and 6 ultra-violet light treatment clinics. At the Centres infant consultations to the number of 2,593 were held in 1928, compared with 2,642 during the preceding year. In addition to these there were 503 ante-natal and 293 actinotherapy sessions.

The total number of attendances at the infant consultations was 127,879, an average of nearly 50 per consultation, of which 3 were primary attendances. For every primary attendance under one year there were 8 subsequent attendances, and for every primary attendance between one and five years there were 3 subsequent attendances. The total number of attendances is lower than that of the preceding year, all of the decrease being due to the lower number of subsequent attendances of children between the ages of one and five.

The greatest increase occurred at the new clinic at Shettleston, where the primary attendances were more than double, and the subsequent attendances increased by over 50 per cent.

The following table gives the attendances at each consultation Centre during the years 1927 and 1928:—

ATTENDANCES AT INFANT CONSULTATIONS, 1928.

	No. of Consultations held.	Children - 1 Year. No. of Attendances.		Children + 1 Year. No. of Attendances.		Total No. of Attendances.		1927 Total No. of Attendances.	
		Prim.	Sub.	Prim.	Sub.	Prim.	Sub.	Prim.	Sub.
Adelphi Street,	303	1,104	8,907	235	10,590	1,339	19,497	1,367	18,987
Cowcaddens, -	258	696	5,612	258	6,854	954	12,466	988	13,421
Elderpark, -	102	270	2,222	—	—	270	2,222	315	2,556
Garngad Hill, -	98	269	2,084	89	2,915	358	4,999	302	5,379
Govan, - -	154	449	3,067	93	2,905	542	5,972	526	7,589
Orr Street, -	405	1,512	12,823	258	9,405	1,770	22,228	1,859	24,423
Maryhill, -	149	424	3,474	119	3,743	543	7,217	446	6,876
Partick, - -	253	533	3,590	157	3,660	690	7,250	544	8,974
Port Street, -	152	463	3,699	143	2,750	606	6,449	474	5,782
Shettleston, -	203	612	5,560	227	6,043	839	11,603	411	7,084
Weir Street, -	260	469	3,821	101	5,404	570	9,225	508	11,233
Cochrane Street,	104	227	1,353	94	1,352	321	2,705	291	2,928
Yoker, [1] - -	—	—	—	—	—	—	—	61	699
Springburn, -	152	488	3,025	181	3,550	669	6,575	604	6,671
	2,593	7,516	59,237	1,955	59,171	9,471	118,408	8,696	122,602
		66,753		61,126		127,879		131,298	

(1) Closed December, 1927.

The illness, &c., recorded at the consultations are here summarised:—

INFANT CONSULTATIONS.—ILLNESSES, &C., RECORDED.

	1927		1928	
	- 1 Year	+ 1 Year	- 1 Year	+ 1 Year
Debility and Malnutrition (including Underweight), ...	385	148	412	202
Birth Debility.	58	—	84	—
Prematurity, ...	51	—	46	—
Marasmus, ...	17	—	8	1
Diseases of Digestive System, ...	5	1	4	3
Diseases of Respiratory System,	3	1	—	3
Syphilis, ...	1	—	—	—
Measles, ...	—	2	1	2
Whooping-Cough, ...	2	—	1	3
Rickets, ...	9	113	21	124
Others, ...	6	3	1	1
TOTAL, ...	537	268	578	339

SUPPLY OF MILK AND MEALS TO NECESSITOUS MOTHERS AND CHILDREN.

During the year supplies of milk and meals continued to be given to expectant and nursing mothers, and to children up to five years of age, under the following general conditions:—(1) Regular attendance at a Child Welfare Centre; (2) when the case was necessitous; and (3) when a supply of milk or meals was certified by the Medical Officer of the Centre to be required on the grounds of health.

Except where conditions of health required a more frequent attendance, infants are not expected to attend more frequently than once a fortnight, and toddlers once in six weeks.

While compliance with above general conditions is usually required, exception is made where a mother or child, on first attendance at an infant consultation, presents conditions of health which suggest that an immediate grant of either milk or meals may be desirable or necessary.

The following table summarises the applications and grants for the year 1928:—

	Applications Granted			
	Free	At Reduced Price	Application Refused	Total
Fresh Milk, ...	36,421	1,216	219	37,856
Dried Milk, ...	159	4	—	163
Dinners, ...	21	—	—	21
	36,601	1,220	219	38,040

These totals represent the number of individuals included in the applications. Grants, when made, are mainly for a period of six weeks at a time.

(a) *Fresh Milk.*—The following table further analyses the number of applications for fresh milk granted during the year:—

Rate charged to Applicant	Number of Families	Number of Expectant and Nursing Mothers	Number of Children under 5 years	Total Number of Pints ordered
		ORIGINAL APPLICATIONS.		
Half-Price, ...	96	46	57	4,324
Free, ...	3,193	1,795	1,632	143,896
	3,289	1,841	1,689	148,220
		REPEAT APPLICATIONS.		
Half-Price, ...	792	202	911	46,548
Free, ...	24,674	7,487	25,507	1,374,683
	25,466	7,689	26,418	1,421,231
		TOTALS.		
Half-Price, ...	888	248	968	50,872
Free, ...	27,867	9,282	27,139	1,518,579
	28,755	9,530	28,107	1,569,451

This table shows that 3,289 original applications were granted during the year for supplies of fresh milk, covering 1,841 expectant or nursing mothers, and 1,689 children under five years of age, or, together, 3,530 individuals. The repeat applications of these families and of those previously on the roll numbered 25,466, making a total of 28,755 applications granted. The total quantity of fresh milk ordered was 1,569,451 pints, and the cost £15,240.

Certificates for grants of fresh milk were given by the medical officers at the various Centres for the following reasons:—

SUMMARY OF MEDICAL CERTIFICATIONS ON APPLICATIONS FOR FRESH MILK.

Diseases	Mothers		Children		Total
	Expectant	Nursing	-1 year	-5 years	
Debility, ...	1,100	283	202	853	2,438
Progressing, ...	—	—	786	1,937	2,723
Insufficiency of Breast Milk,	—	7,929	—	—	7,929
Child losing Weight, ...	—	—	142	858	1,000
Child under Weight, ...	—	—	3,908	11,816	15,724
Child's Weight stationary....	—	—	109	849	958
Malnutrition, ...	—	—	218	404	622
Marasmus, ...	—	—	4	3	7
Debility—after—					
Infectious Diseases, ..	—	—	165	1,190	1,355
Other Diseases, ...	110	4	312	1,319	1,745
Infectious Diseases—					
Measles, ...	—	—	7	51	58
Whooping Cough, ...	—	—	18	97	115
Chickenpox, ...	—	—	2	9	11
General Diseases—					
Anæmia, ...	30	11	2	14	57
Rickets, ...	—	—	152	2,598	2,750
Diseases of Respiratory System—					
Bronchitis, ...	—	1	15	41	57
Pneumonia, ...	—	—	1	16	17
Others—					
Enteritis, ...	—	—	1	6	7
Albuminuria, ...	63	1	—	—	64
Totals, ...	1,303	8,229	6,044	22,061	37,637

(b) *Dried Milk.*—During the year supplies of dried milk were also given in suitable cases, the brand in use being "Glaxo," the number of applications received being as follows:—

	Number of Families	Number of Expectant and Nursing Mothers	Number of Children under five years	Number of Packets Ordered
Original Applications,	132	5	127	174
Repeat ,,	1,693	30	1,676	2,834
Total, ...	1,825	35	1,803	3,008

While the same scale of "necessitousness" is applied to applications for dried milk as to applications for fresh milk, the conditions of grant are somewhat different, for, while grants of fresh milk are refused to families whose income is over the scale, supplies of dried milk may be given at the wholesale rate. The following summary shows the number of packets and the amount recovered, as well as the loss falling upon the Corporation, for the supplies of dried milk issued under these conditions:—

Price per Packet	Number of Packets Issued	Cost to Corporation	Amount Recovered	Gain or Loss to Corporation
Full Price—				
1s. 6d., - -	2,073	£138 4 0	£155 9 6	+ £17 5 6
Part Price—				
1s.. - - -	18	1 4 0	0 18 0	- 0 6 0
Free, - - -	917	61 2 8	—	- 61 2 8
	3,008	£200 10 8	£156 7 6	- £44 3 2

In all, 3,008 packets were distributed under the scheme, of which 2,073 were charged at full price, 18 at part price, while 917 were given free, the net cost to the Corporation being £44 3s. 2d.

The reasons given in the medical certificate forms for the free and reduced price grants are shown in the following summary:—

SUMMARY OF MEDICAL CERTIFICATIONS ON APPLICATIONS FOR DRIED MILK.

	Mothers		Children		
Diseases	Expectant	Nursing	-1 Year	-5 Years	Total
Debility, ...	1	2	4	—	7
Progressing, ...	—	—	25	—	25
Insufficiency of Breast Milk,	—	2	—	—	2
Child Losing Weight, ...	—	—	1	—	1
Child Under Weight, ...	—	—	110	1	111
Child's Weight Stationary,	—	—	1	—	1
Malnutrition, ...	—	—	12	—	12
Debility after Infectious diseases, ...	—	—	1	—	1
Do. other diseases,	—	—	2	—	2
Rickets, ...	—	—	1	—	1
Totals, ...	1	4	157	1	163

Economic Conditions.—The following summary shows the conditions under which applications came within the scale of allowances:—

Applications Refused—	
Income over scale, ...	219
Applications granted at half-price, ...	1,220
Carry forward,	1,439

Brought forward,		1,439
Applications granted free—		
On Unemployed Relief Scale,	19,760	
Parish and Health Insurance,	1,524	
Parish and Pension,	1,003	
Illegitimacy,	500	
Employed full-time, but under Scale,	2,196	
Waiting Labour Bureau and Parish,	574	
Employed part-time,	995	
Pension only,	470	
Bureau only,	7,966	
Deserted Wife,	540	
Health Insurance,	97	
Pension and Health Insurance,	56	
Compensation,	170	
Labour Bureau and Pension,	282	
Labour Bureau and room let,	164	
No Income,	152	
Strike pay,	1	
Room let only,	16	
Family earnings,	104	
Family earnings and Pension,	10	
		36,580
		38,019

Supply of Meals.—The arrangement with the Education Authority for the supply through their feeding Centres of meals for mothers and children, granted under the Child Welfare Scheme, was discontinued in March. The following table shows the numbers supplied to that date:—

Centre	Children (3-5 Years)	Infants (9 Months-3 Years)	Expectant and Nursing Mothers	Total
Hayfield School,	14	—	—	14
Milton Street School,	389	481	463	1,333
Dobbie's Loan School,	30	30	1	61
All Centres,	433	511	464	1,408

The charge by the Education Authority was 3½d. per meal, and the cost for the period amounted to £21.

SEWING, &c., CLASSES.

Classes for sewing and social evenings for mothers were arranged at various Centres during the winter months, as shown below :—

Centre.	Nature of Class.	Period.	Day and Hours.	Average Attendance.
Cowcaddens	Sewing	Nov. to Mar.	Mon., 7 p.m.	30
Bridgeton	Sewing	Oct. to April,	Wed., 7 p.m.	75
Hutchesontown	Sewing (Conducted by Gorbals Branch G.I.H.V.A.)	Oct. to Mar.	Tues., 2.30 p.m.	30
Partick	Sewing (Conducted by Partick Branch G.I.H.V.A.)	Oct. to Mar.	Tues., 7 p.m.	20
Govan	Sewing (Conducted by Govan East Branch G.I.H.V.A.)	Oct. to Mar.	Thurs., 7 p.m.	30
Arklet Road	Sewing and Lectures (Conducted by Govan West Branch G.I.H.V.A.)	Oct. to Mar.	Wed., 7 p.m.	45
Port Street	Sewing, etc. (Conducted by Anderston Branch G.I.H.V.A.)	Oct. to Mar.	Thurs., 2 p.m.	26
Maryhill	Sewing (Conducted by Maryhill Branch G.I.H.V.A.)	Oct. to Mar.	Tues., 7 p.m.	30-40
Kingston	Sewing (Conducted by Kingston Branch G.I.H.V.A.)	Oct. to Mar.	Thurs., 7.30 p.m.	35

ANTE-NATAL CONSULTATIONS.

Glasgow Royal Maternity Hospital.—The total number of cases attending the ante-natal dispensary for the first time was 4,431 during 1928, compared with 4,267 in 1927, while the total attendances during the respective years were 9,750 and 10,011. During 1928, 2.861 cases were treated to a termination in delivery, of which 964 were attended in their own homes.

The number admitted to the ante-natal wards during 1928 was 1,172, compared with 919 in 1927.

At the infant consultations held at the Maternity Hospital there were 7,080 attendances, as compared with 6,133 during the previous year. The first attendances numbered 1,004.

	1926	1927	1928
Ante-Natal Dispensary—			
Number attending for first time, ...	4,266	4,267	4,431
Total attendances, ...	10,364	10,011	9,750
Number treated to a termination in delivery,	2,661	2,705	2,861
Number sent to Hospital from Dispensary—			
(*a*) For confinement, ...	1,820	1,626	1,689
(*b*) ,, treatment, ...	279	293	348
(*c*) ,, miscarriage, ...	107	100	74

ANTE-NATAL WARDS—

Average number under treatment, ...	24	22	32
Number admitted, ...	866	919	1,172
Total days, ...	8,838	8,036	11,772
Condition on dismissal :—			
(1) Recovered, ...	202	152	281
(2) Improved, ...	180	147	101
(3) Confinement completed, ...	440	558	672
(4) Died, ...	1	4	7
(5) No change, ...	42	64	94

INFANT CONSULTATION—

First Attendances, ...	1,167	1,104	1,004
Subsequent Attendances, ...	5,886	5,029	6,076
Total, ...	7,053	6,133	7,080

At the Ante-Natal Clinics held at the various Child Welfare Centres the numbers continued to increase. Altogether there were 503 consultations held during 1928, compared with 488 during the preceding year. The number of attendances recorded was 2,651 primary and 9,142 subsequent attendances, a total of 11,793 compared with 9,297 for the preceding year.

The number of consultations and attendances at each Centre is shown in the following table :—

ATTENDANCES AT ANTE-NATAL CLINICS, 1928.

	No. of Clinic Sessions.	No. of Attendances. Primary.	Subsequent.	Total.
Partick, ...	48	285	1,173	1,458
Cowcaddens, ...	50	233	1,138	1,371
Maryhill, ...	52	217	1,087	1,304
Springburn, ...	52	166	471	637
Orr Street, ...	51	362	943	1,305
Hutchesontown, ...	52	397	1,332	1,729
Govan, ...	100	504	1,370	1,874
Elderpark, ...	50	330	984	1,314
*Shettleston, ...	48	157	644	801
	503	2,651	9,142	11,793

* Opened in February.

The following tables show (1) the age of mothers who attended and (2) the conditions requiring attention which were found :—

Ages of Mothers.	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Hutche-son-town	Govan	Elder-park	Shett-leston	Totals
– 20	16	13	5	5	22	12	29	12	5	119
– 25	57	60	46	43	83	101	140	76	37	643
– 30	95	70	53	46	89	104	141	97	55	750
– 35	60	43	56	33	107	102	105	87	33	626
– 40	41	34	38	28	41	51	59	30	20	342
– 45	6	4	14	6	10	6	17	9	7	79
45 +	—	1	—	—	—	—	1	1	1	4
Not Pregnant,	9	8	7	4	7	21	12	17	3	88
	284	233	219	165	359	397	504	329	161	2651

Note—Cases transferred from Partick to Govan (1) and Maryhill (1); from Cowcaddens to Maryhill (1), Springburn (1), and Orr Street, (1): from Springburn to Cowcaddens (2), from Orr Street to Shettleston (5); from Govan to Cowcaddens (1); from Elderpark to Partick (1); and from Shettleston to Orr Street (1).

Conditions Found	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Hutche-son-town	Govan	Elder park	Shett-leston	Totals
Venereal Disease,	6	11	9	7	7	30	7	4	2	83
Varicose Veins,	30	40	17	19	53	29	64	49	28	329
General Debility,	95	60	57	11	99	89	68	72	28	579
Cardiac Disease,	8	22	11	7	16	7	21	24	5	121
Hyperemesis Gravidarum,	—	4	1	2	7	2	1	1	1	19
Alimentary Conditions,	30	55	27	25	67	94	80	72	12	462
Dentition (Bad),	41	44	21	36	55	32	186	125	64	604
Contracted Pelvis,	32	48	14	2	16	17	15	12	10	166
Kidney Disease, (Albuminuria),	24	69	15	13	30	101	125	17	27	421
Respiratory Disease,	23	31	13	10	48	33	35	19	9	221
Hæmorrhage,	6	4	5	2	10	10	21	11	5	74
No apparent disease,	27	19	23	12	28	29	56	20	12	226
Other conditions,	27	51	18	54	75	31	54	17	45	372
	349	458	231	200	511	504	733	443	248	3,677

The conditions found on medical examination are enumerated in the above statement, but as in many cases two or three causes of illness were present, the total number of conditions is much in excess of the number of mothers. The most frequent conditions requiring attention were those of the alimentary system (including constipation), general debility, anæmia, varicose veins, albuminuria, &c.

About 15 per cent. were primiparæ, as shown in the following summary :—

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Hutcheson-town	Govan	Elder-park	Shettle-ston	Totals
Primiparæ, ...	39	26	31	22	70	46	88	35	13	370
Multiparæ, ...	236	199	181	139	282	330	404	277	145	2,193
Total,	275	225	212	161	352	376	492	312	158	2,563

The results, so far as known, as to whether pregnancy resulted at full term, prematurely, &c., are here given, together with the number of still-births :—

PREVIOUS YEAR'S CASES TERMINATED IN 1928 :—

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Hutcheson-town	Govan	Elder-park	Shettle-ston	Totals
Alive, ...	38	54	64	27	63	98	72	52	2	470
Still-Births, ...	2	1	1	1	4	2	4	3	—	18
Full-term, ...	40	54	63	28	64	94	75	54	2	474
Premature, ...	—	1	2	—	3	6	1	1	—	14
Not pregnant, ...	—	—	—	1	4	—	4	—	—	9
Abortion or Miscarriage, ...	—	—	1	—	3	1	—	2	—	7
No trace and left district, ...	—	—	—	—	—	1	—	1	—	2
	40	55	66	29	74	102	80	58	2	506

NOTE.—2 cases transferred from Orr Street to Shettleston

1928 Cases :—

	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Hutcheson-town	Govan	Elder-park	Shettle-ston	Totals
Alive, ...	190	155	139	100	264	253	360	209	108	1,778
Still-Births, ...	13	7	4	5	11	11	10	4	2	67
Full-term, ...	197	151	135	100	269	255	365	207	107	1,786
Premature, ...	6	11	8	5	6	9	5	6	3	59
Not pregnant, ...	9	8	7	4	7	21	12	17	3	88
Abortion or Mis-carriage, ...	3	4	8	3	2	8	7	5	5	45
Left district, ...	1	3	—	5	2	2	1	1	—	15
Died before termination, ...	—	—	—	—	1	1	1	2	1	6
Not terminated,	68	56	61	48	72	101	113	91	42	652
	284	233	219	165	359	397	504	329	161	2,651

Sixteen deaths have occurred among 2,391 patients whose pregnancy terminated in 1928. This is equivalent to a death-rate of 6·6 per 1,000 births. The causes of death are as follows :—Cardiac disease, 4; puerperal sepsis, 3; cerebral embolism, 2; pulmonary tuberculosis, 2; placenta prævia, 1; nephritis, 1; rupture of uterus, 1; hyperemesis, 1; appendicitis, 1.

Of the .3 mothers who died of sepsis, 2 had normal deliveries, while the third had a still-birth : she attended an Ante-Natal Centre when 5 months pregnant, refused to return or to go to hospital, although she had a badly contracted pelvis. She was delivered at home. The mother who died of placenta prævia refused to go to hospital.

The death from rupture of the uterus occurred in hospital, where the patient was for 2 months prior to confinement. The death from appendicitis also occurred in hospital (Western Infirmary) at the fourth month of pregnancy and seemed unconnected with the pregnancy.

The total number of still-births (85) occurring among the pregnancies included in this analysis represents a rate of 3·6 per cent., which may be compared with the average of 4·2 per cent. for the City generally. The percentage of still-births among cases attending during the previous year was 4·2.

A similar comparison as to whether the births occurred at full time or otherwise shows that during 1928 the premature births formed about 3·1 per cent. of the total, as compared with 2·5 per cent. for the previous year. Abortions equalled 2·2 of the total pregnancies.

The month at which the first attendance was made at the clinic is given below, and shows that, although the majority came during the seventh month, almost one-half of the total attended at an earlier period :—

Month of Attendance	Partick	Cow-caddens	Mary-hill	Spring-burn	Orr Street	Hutcheson-town	Govan	Elder-park	Shettles-ton	Totals
1 ...	1	15	7	—	—	—	4	—	—	27
2 ...	15	24	19	13	14	11	19	3	8	126
3 ...	26	24	19	12	24	22	21	15	9	172
4 ...	25	21	19	13	26	39	33	29	16	221
5 ...	35	37	21	25	36	81	52	24	21	332
6 ...	42	43	39	37	70	79	96	49	29	484
7 ...	55	28	35	32	95	72	132	70	34	553
8 ...	53	21	37	26	61	55	116	74	34	477
9 ...	23	12	16	3	26	17	19	48	7	71
Not pregnant,	9	8	7	4	7	21	12	17	3	88
	284	233	219	165	359	397	504	329	161	2,651

MATERNAL DEATHS.

During the year 1928, 208 deaths were classified as due to maternal causes, representing a rate of 8·79 per 1,000 births. The rate for the preceding year was 7·21 and, in 1926, 6·68, while the respective rates for Scotland were 6·43 and 6.40. Most of the increased mortality during the year was caused by a larger number of deaths from puerperal sepsis which were much more numerous especially during the spring, when a considerable number of cases occurred in one of the lying-in hospitals. A comparison which is given on page 59 indicates that there was little difference in the incidence of the disease between residential and artisan wards.

The deaths per 1,000 births from abortion and miscarriage in 1928 are higher than in any of the previous years, shown in the following table, while the rate from albuminuria and eclampsia was only exceeded in 1923.

STATEMENT SHOWING MATERNAL DEATHS AND RATE PER 1,000 BIRTHS IN GLASGOW, IN THE YEARS 1921-1928.

	1921 Rate	1922 Rate	1923 Rate	1924 Rate	1925 Rate	1926 Rate	1927 Rate	1928 Deaths	Rate
Abortion Miscarriage, - -	·30	·64	·49	·32	·39	·65	·55	16	·68
Uncontrollable Vomiting, -	·13	·14	·07	·20	·47	·41	·17	11	·47
Ectopic Gestation, - -	·20	·11	·11	·16	·28	—	·08	2	·08
Other Diseases and Accidents of Pregnancy, - -	·24	·32	·22	·39	·35	·04	·38	5	·21
Puerperal Hæmorrhage, - ·	·87	·88	·79	·39	·98	·61	·76	15	·63
Other Accidents of Parturition,	·54	·60	·75	·51	·67	·98	·89	23	·97
Puerperal Sepsis, - - -	2·32	3·00	2·55	2·21	2·32	2·11	1·99	79	3·34
Phlegmasia Alba Dolens, Embolism, - - -	·13	·28	·15	·04	·24	·37	·30	6	·25
Albuminuria of Pregnancy, Eclampsia, - - -	·87	·78	1·31	·95	1·14	1·06	1·23	36	1·52
Other Diseases of Puerperium,	·77	81	·64	·67	·71	·41	·82	15	·63
Puerperal Diseases of Breast,-	—	·04	—	—	·08	·04	·04	—	—
Totals—Glasgow, -	6·39	7·60	7·08	5·84	7·63	6·68	7·21	208	8·79
,, Scotland, -	6·38	6·60	6·42	5·82	6·16	6·40	6·43	—	—

ULTRA-VIOLET RAY CLINICS.

No alteration has taken place in the arrangements for light treatment of children suffering from rickets, malnutrition, &c. The number of diets held weekly at Cochrane Street and Govan Town Hall remain the same as at the end of last year.

The installation and the results of treatment have been fully dealt with in previous reports, so that only the records of numbers treated are here given in respect of 1928.

RECORD OF ATTENDANCES AND CONSULTATIONS DURING 1928.

	Number of Clinics held.	Children, -1 year. Number of Attendances.		Children, +1 year. Number of Attendances.		Mothers. Number of Attendances.		Total Number of Attendances.	
		Prim.	Sub.	Prim.	Sub.	Prim.	Sub.	Prim.	Sub.
Cochrane Street,	149	143	1,099	504	9,687	36	270	683	11,056
Govan, - -	149	80	938	263	5,886	50	609	393	7,433
	298	223	2,037	767	15,573	86	879	1,076	18,489
		2,260		16,340		965		19,565	

Present Ages of Children attending—	Cochrane Street.	Govan.
– 1 year,	47	80
– 2 years,	184	137
– 3 ,,	192	74
– 4 ,,	135	31
– 5 ,,	89	21
	647	343

Sex—	Cochrane Street.	Govan.
Male,	329	184
Female,	318	159
	647	343

Cases Treated by Ultra-Violet Rays.

Children—		Cochrane Street.	Govan.
Rickets.	1. Prophylaxis,	3	—
	2. Early Rickets	139	55
	3. Moderate Rickets,	188	64
	4. Marked Rachitic deformity,	91	88
Rickets c. Tetany,		18	—
Debility after Infectious Disease,		36	—
Debility after Acute Illness,		23	46
Debility—weight stationary, or losing, or not thriving,		—	44
Bronchitis,		7	6
Malnutrition,		91	30
Marasmus,		—	2
Mentally Defective,		5	—
Nervous instability,		19	8
Skin Diseases,		23	—
Special,		4	—
		647	343

Mothers—	Cochrane Street.	Govan.
Pregnancy,	30	44
Nursing mothers,	6	6
	36	50

INFANT VISITATION.

Under the scheme of infant visitation every birth is visited if the notification does not state that a medical practitioner has been in attendance, and the following table shows the record of those visited, together with certain information obtained:—

	1926	1927	1928
Inquiry cards returned,	18,956	17,683	17,919
Full information obtained,	17,938	16,757	16,969
Doctor found in attendance,	41	32	33
Wrong addresses,	—	—	—
Others,	977	894	917
Inquiry cards issued,	18,530	17,742	17,862

Of those for whom full information was obtained—

	1926	1927	1928
Legitimate, ...	16,546	15,838	15,872
Illegitimate, ...	994	987	1,041
Born at full term, ...	16,676	15,990	16,072
Premature births, ...	864	835	841

Condition of Infant at Birth—

	1926	1927	1928
Well nourished, ...	14,353	13,456	13,932
Fairly nourished, ...	1,836	2,049	1.574
Badly nourished, ...	727	642	695
Still-born, ...	624	678	712

Nature of Feeding at First Visit—

	1926	1927	1928
Breast, ...	14,415	13,650	13.524
Artificial, ...	1,462	1,594	1.550
Breast and Artificial, ...	465	378	542
Still born, ...	624	678	712
Dead at First Visit, ...	574	525	579
Adopted, ...	—	—	6

In addition to home visitation, the nurses attend the Child Welfare Consultations in their own districts. They thus have an opportunity of reporting to the doctor any illness or condition requiring medical treatment, and of following up the case afterwards to see that the treatment recommended is carried out.

The following series of summaries indicate the number of first and revisits overtaken, together with a record of conditions found :—

FIRST VISITS.

	1926	1927	1928
Infants visited under 1 year of age,	16,519	15,307	15,392
Infants visited over 1 year of age,	—	—	—
Removed and new address not traced,	459	383	337
In hospital or nursery, ...	100	100	105
Dead, ...	585	533	640
Refused admittance, ...	3	2	2
Doctor in attendance, ...	53	34	41
Information refused, ...	12	15	24
Still-born, ...	633	645	675
Visits unnecessary, ...	298	212	212
Adopted, ...	52	41	33
Nursed out, ...	17	7	18
	18,731	17,279	17.479

Revisits.

	1926	1927	1928
Infants visited under 1 year of age,	1,345	1,313	1,225
Infants visited over 1 year of age,	2.428	2,135	2,646
	3,773	3,448	3,871
Removed and new address not traced,	656	843	972
Out at time of visit, ...	114	126	202
In hospital or nursery, ...	21	34	25
Dead, ...	526	511	630
Adopted, ...	11	20	27
Refused admittance, ...	—	—	—
Doctor in attendance, ...	1	—	2
Visits unnecessary, ...	1	1	—
Nursed out, ...	4	12	16
Information refused, ...	—	—	3
Visits resented, ...	—	—	—
	5,107	4,995	5,748

The children found alive on the occasion of the first visit by the Health Visitor are classified in the following table under three groups :—

	Well	Fair	Bad	Total
1926, ...	14,427	1,956	136	16,519
1927, ...	13,331	1,851	125	15,307
1928, ...	13,617	1,658	117	15,392

Generally speaking, those classified as "well" on the occasion of the first visit were not revisited. The following table is a summary of results found at final visit :—

	Still Good	Much Improved	Slightly Improved	No Improvement	Worse	Total
1926, ...	2,896	834	27	16	—	3,773
1927, ...	2,504	894	44	6	—	3,448
1928, ...	3.051	813	5	2	—	3,871

GLASGOW INFANT HEALTH VISITORS' ASSOCIATION.

Working in association with the Public Health Department is the Glasgow Infant Health Visitors' Association, to whom are reported children whom it is desirable to keep under observation during a longer period than is possible by the official visitors. The number of visitors fluctuates around 300.

As the period of visitation generally extends over the first twelve months of life, a complete year must elapse before the results of the visitation can be summarised.

The following is a summary of the results for the years 1925-1927:—

Year	Year old	Removed	Dead	Ceased to be Visited	Visits Unnecessary	No Information	Visits Resented	No Visitor	Total
1925	2,259	242	224	26	18	6	4	2	2,781
1926	1,685	249	161	21	14	5	7	4	2,146
1927	1,717	244	225	5	10	1	6	2	2,210

DOMESTIC HELPS.

This scheme came into being in Glasgow towards the end of 1924, and from the 22nd of November till the end of that year four families had the assistance of these women. In 1925 only 13 families availed themselves of their services, but in 1926 the scheme began to take hold and 100 families were helped in this way. Since then there has been a slight increase in the demand each year. In 1927, 113 families benefited and, in 1928, 132.

That the scheme is of real value there is no doubt, and the slow but steady increase suggests that its value is beginning to be realised by those whom it is intended to benefit.

Payment for the services of helps is in accordance with a scheme of "necessitousness" based on the scale applicable to grants of milk and meals under the Child Welfare Scheme, with a minimum charge of one shilling per day. The following is a summary of the payments made for services rendered:—

	Cases	Number of Days Attended.	Rate per Day.	Amount Paid by Patient.
	59	734	1/-	£36 14 0
	29	352	1/6	26 8 0
	23	345	2/-	34 10 0
	9	107	2/6	13 7 6
	9	85½	3/-	12 16 6
	3	33	3/6	5 15 6
	—	—	4/-	—
1928,	132	1,656½		£129 11 6
1925,	17	246	—	£18 11 6
1926,	107	1,407	—	102 2 6
1927,	118	1,361	—	£105 8 6

During 1928, 36 individual helps attended 132 cases for a total of 1,652½ days, or an average of 12½ days per case. The amount recovered in fees was £129 11s. 6d. The helps are remunerated at the rate of 5s. per day, so that the balance falling to be met by the Corporation was £284 11s.

MATERNITY BUNDLES.

The scheme for supplying maternity bundles in necessitous cases was continued during the year. The demand became so great that it was deemed desirable that evidence should be given by the people that the infant was really without clothing, so that during the second half of the year clothing was only supplied on production of a line from the midwife stating that the baby was born and was in need of clothing. In non-paying cases the bureau card also had to be shown. Even with this restriction the number has gone up from 335 bundles or part bundles to 428. Last year £19 8s. 1d. was received for bundles from persons who were above the bureau scale, but whose incomes were very small. This year £19 14s. 6d. was received from this source.

DAY NURSERIES.

Including the Phœnix Park Kindergarten, there are, as in previous year, six Centres with nursery accommodation. The total attendances of children at these Centres during 1928 was 35,992, in comparison with 36,522 during the previous year.

The following figures show the number of attendances, &c., at each Centre during the year :—

Nursery	Number of Days open	Total Attendances during the year	Average	Maximum number in one day
Bridgeton, ...	241	7,730	32	40
Cowcaddens, ...	249	5,852	24	33
Phœnix Park Kindergarten,	187	4,927	26	31
Milton, ...	238	6,479	27	39
Hutchesontown, ...	251	6,548	26	34
Kingston, ...	218	4,456	20	30

The number of attendances at some of the Day Nurseries was reduced owing to the prevalence of infectious diseases, such as whooping-cough, measles, &c. Cowcaddens, Milton, and Kingston were affected for that reason. Fewer children were brought to the Nurseries owing to unemployment among the mothers.

Cowcaddens Play Centre.—The weekly play centre for ex-nursery children, which begins in October and ends at Easter, was continued at Cowcaddens Day Nursery. It is held on Wednesday evenings from 6 to 7 o'clock by the Matron assisted by 3 voluntary helpers. The attendance is becoming larger and the children seem to enjoy its activities, such as games, country dancing, story-telling, and hand-ball. Last year the attendance was 28, and any necessary expense apart from the use of the Nursery is met by donations or a sale of work.

JUVENILE UNEMPLOYMENT CLASSES, &c.

The arrangement whereby girls from the Juvenile Unemployment Classes attend at certain of the Day Nurseries for training purposes was continued during the year. Each girl receives training in the general care of infants, and in laundry and kitchen work, over a period of one month; and the results of training, as furnished by the reports of the matrons, are shown below:—

Training Completed—		
Work Satisfactory,	72	
Work Unsatisfactory,	2	
		74
Training not Completed—		
Left to take up employment,	6	
Attained 18 years and ceased to attend Juvenile Unemployment Classes,	—	
Illness,	1	
Other reasons (mainly unsuitability for the work),	12	
		19
		93

After completion of their period of training one girl was engaged as a maid at one of the Centres, one was given employment at Mount Blow Home and another obtained employment as a pantry girl.

Training was also given at the Day Nurseries to 25 pupils of the College of Domestic Science.

COUNTRY HOMES.

No change has taken place in the accommodation of the three country homes. As stated in the report for last year the accommodation in Scotstoun and Mount Blow Homes was utilised for a period for the treatment of convalescent children who had recovered from measles and pneumonia in the fever hospitals, but who, on account of some other complication, could not be returned to their homes without further treatment. This arrangement began in November, 1927, when there was considerable pressure on hospital accommodation and continued into the early months of 1928. During these early months 63 convalescents were admitted to Mount Blow and 73 to Scotstoun. Thereafter the accommodation reverted to its usual purpose.

The following analysis shows that 474 children were admitted under the Child Welfare Scheme to the three Country Homes during the year, the two principal reasons for admission being rickets and malnutrition:—

	Mount Vernon	Scotstoun	Mount Blow	Total
Rickets,	50	54	89	193
General Malnutrition, and Debility,	15	49	62	126
Bronchitis,	5	3	5	13
Debility after acute illnesses,	19	19	45	83
Anæmia,	34	6	11	51
Nervousness,	—	4	3	7
Others,	—	—	1	1
	123	135	216	474

The dismissals during the year were 135 from Mount Vernon, 105 from Scotstoun, and 184 from Mount Blow. The condition on dismissal is summarised in the following statement:—

	Mount Vernon	Scotstoun	Mount Blow	Total
Much improved, ...	98	79	70	247
Not improved, ...	—	—	—	—
Parents leaving city, ...	—	2	2	4
Transferred suffering from infectious disease, ...	8	13	14	35
Taken home by parents (fretting, &c.), ...	3	10	18	31
Died, ...	—	—	—	—
For admission to other Institutions, ...	1	—	—	1
Sent home, ...	—	1	1	2
Contacts with cases of Infectious Disease sent home,	25	—	79	104
	135	105	184	424

Apart from those dismissed from the Homes for special reasons, 247 were much improved.

Garscube Cottage Hospital.—The arrangement whereby this Home was taken over for the purpose of giving debilitated mothers with young children an opportunity of recuperating their health by a fortnight's rest has been continued. During the year, 168 mothers with 168 infants were admitted, while dismissals numbered 165 mothers and 165 infants. Of the total, 112 completed fourteen days' residence, while 4 others were kept in for a few days longer; the remainder (49) left before the end of the fortnight, mostly for domestic reasons.

MIDWIVES' AND MATERNITY HOMES ACT, 1927.

The list shown in the Report for last year included applications for registration or exemption received up to the end of March, and showed that 44 homes had been registered and 8 had been granted exemption. From March to the end of the year, 11 applications for registration were received. Of these, 9 were granted and 2 refused. Registration was required for two of these homes because of their removal to new premises, and in a third because of a change in the constitution of the supervising body. One application for exemption was received and granted.

Five homes were removed from the Register during the period; in one case the keeper had died; in two others the keepers intimated their intention of giving up the work; and in the other two they had removed to new premises.

The number of maternity homes on the Register at 31st December is therefore as follows:—

	Registered	Exempted
Maternity Homes, ...	2	—
General Infirmaries and Hospitals, ...	—	5
Nursing and Maternity Homes, ...	45	4
	47	9

In the section of this Report which deals with the supervision of midwives will be found details of abnormal conditions occurring in connection with the confinements taking place in the homes conducted by midwives.

MIDWIVES (SCOTLAND) ACT, 1915.

The number of midwives who notified their intention of practising at the end of 1928 was 289, a decrease of 3 since last year. Of these 181 are entitled to registration by examination and the remaining 108 are *bona fide* midwives. The number of new midwives who made notification of their intention to practise for the first time was 18, of whom 12 passed the examination, while 3 of the remainder were County midwives who attended odd cases in the City.

Only 12 confinements during the year were without skilled attention so far as is known, 9 of which were foundlings and 3 cases in the hands of unregistered women, none of whom are known as handy women.

In one of the registered maternity homes 3 cases of puerperal fever, with one death, occurred in succession, but no trace of the source of infection could be found. The only other maternal death associated with these homes was one of eclampsia, the patient being removed to the Maternity Hospital, where she died undelivered.

The following table summarises the numbers for the year, with relative figures for the two preceding years:—

	1926	1927	1928
Midwives in Practice during year, ...	310	292	289
THE QUALIFICATIONS FOR CERTIFICATION UNDER ACT, HELD BY THE FOREGOING WERE—			
In Practice, December, 1914, ...	129	115	108
C.M.B. (Scotland) Examination, ...	133	130	137
Other recognised qualifications, ...	48	47	44

In the following table some indication is afforded of the number of births attended during the year by individual midwives. It would seem that of the 10,269 births attended by midwives, 7,762 occurred in the practice of midwives with 50 confinements or more in the year :—

BIRTHS NOTIFIED BY MIDWIVES.

	Births Notified		1928	
	1926	1927	Births	Midwives
Under 50 Notifications, ...	3,002	2,542	2,507	160
50-100 „ ...	2,599	3,038	3,357	48
100-200 „ ...	3,604	3,801	3,678	26
200-300 „ ...	1,811	1,170	727	3
	11,016	10,551	10,269	237

STILL-BIRTHS NOTIFIED BY MIDWIVES.

	Midwives			Still-Births notified		
Notifications	1926	1927	1928	1926	1927	1928
1-5, ...	95	108	108	200	233	222
6-10, ...	12	6	5	83	41	37
	107	114	113	*283	†274	‡259
Percentage of Births attended, ...				2·6	2·6	2·5

* In 86 cases, Doctors assisted.
† In 81 „ „ „
‡ In 80 „ „ „

The figures in the two following summaries contain records of ophthalmia occurring in the practice of midwives, so that the numbers are not the same as the actual cases referred to in other sections of this Report :—

CASES OF OPHTHALMIA NEONATORUM OCCURRING IN PRACTICE OF MIDWIVES.

	Midwives			Cases notified		
Notifications	1926	1927	1928	1926	1927	1928
1-5, ...	76	83	80	165	180	166
6-10, ...	20	14	18	149	101	129
11-15, ...	7	4	6	83	55	77
16-20, ...	3	2	1	52	34	16
21-25, ...	2	2	2	45	45	47
Over 25, ...	—	—	—	—	—	—
	108	105	107	494	415	435
Percentage of Births attended, ...				4·5	3·9	4·2

Cases of Puerperal Fever occurring in Practice of Midwives.

	Midwives			Cases		
	1926	1927	1928	1926	1927	1928
1 Case, ...	41	43	53	41	43	53
2 Cases, ...	15	12	17	30	24	34
3 ,, ...	6	3	5	18	9	15
4 ,, ...	1	2	2	4	8	8
5 ,, ...	1	1	2	5	5	10
	64	61	79	98	89	120

Number of Requests for Assistance to Medical Practitioners in Cases of Emergency under Rule.

	Midwives			Requests made		
Notifications	1926	1927	1928	1926	1927	1928
Under 10, ...	110	106	97	417	427	400
,, 20, ...	45	47	51	609	641	666
,, 30, ...	26	20	19	608	477	424
,, 40, ...	8	10	13	275	354	432
,, 50, ...	8	8	5	341	344	235
Over 50, ...	8	4	6	497	225	339
	205	195	191	2,747	2,468	2,496

During the year there were 2,496 occasions on which medical help was called by midwives, which represents 24 per cent. of the total births occurring in the practice of midwives, and compares with 23 per cent. in 1927 and 25 per cent. in 1926. Details of the nature of emergency are not given this year, but the following indicates the period during which medical assistance was called :—

Nature of Emergency.	1926	1927	928
In all cases in which a woman during pregnancy, labour, or lying-in appears to be dying or is dead, ...	3	3	1
Pregnancy.—In cases of a pregnant woman, where there is any abnormality or complication, ...	186	131	106
Labour.—In the case of a woman in labour at or near term, when there is any abnormality or complication, ...	1,752	1,607	1,682
Lying-in.—In the case of a lying-in woman, when there is any abnormality or complication, ...	303	259	288
The Child.—In the child, when there is any abnormality or complication, ...	480	452	404
Cannot be classified, ...	23	16	15
Total, ...	2,747	2,468	2,496

DEATHS (NOTIFIED BY MIDWIVES) BEFORE A DOCTOR WAS IN ATTENDANCE, ...	1 mother	22 infants
LAYING OUT THE DEAD, ...	1 adult	4 infants
ARTIFICIAL FEEDING, ...		29 Notifications

INTIMATION OF EXPOSURE TO INFECTION.

Diseases	1926	1927	1928
Puerperal Fever, ...	74	59	90
Measles, ...	32	11	6
Whooping-Cough, ...	2	—	1
Scarlet Fever, ...	10	11	5
Diphtheria, ...	3	6	3
Influenza, ...	1	—	—
Pneumonia, ...	10	4	8
Erysipelas, ...	—	2	1
Enteric, ...	1	—	—
Chickenpox,...	1	5	2
Others, ...	4	5	4
	138	103	120

Fees to Doctors in Emergency Cases.—In the following table the total amount of accounts for the year ending November is shown, that being the period at which doctors' accounts are made up :—

Year ended November,	1922,	... ...	£2,040	7	0
Do. do.,	1923,	... ...	1,829	17	0
Do. do.,	1924,	... ...	1,229	0	0
Do. do.,	1925,	... ...	1,416	18	0
Do. do.,	1926,	... ...	1,610	4	6
Do. do.,	1927,	... ...	1,456	11	6
Do. do.,	1928,	... ...	1,632	5	0

The practice of issuing accounts with the object of recovering some part of the fee, which was begun as from June, 1922, has been continued, and during the past year £366 8s. 6d. has been so recovered, while £28 16s. 6d. was withdrawn from medical practitioners' accounts, and accounts for £13 9s. were deleted.

OPHTHALMIA NEONATORUM.

During the year 1928, 692 cases of ophthalmia neonatorum were notified, compared with 652 in 1927 and 665 in 1926. These numbers represent rates of 29·2, 27·3, and 26·8 respectively of all births registered. Particulars of these years are given in the following table, according to attendance at birth, which would seem to indicate that a greater number of cases were reported by nurses and midwives.

OPHTHALMIA NEONATORUM CASES AND CASE-RATES PER 1,000 BIRTHS.

NOTIFIED BY	Cases.			Rates.*		
Year	1926	1927	1928	1926	1927	1928
Doctors, ...	35	33	40	5·0	4·8	6·0
Institutions, ...	53	46	73	15·2	14·1	20·6
Inst. Nurses, ...	82	154	145	23·4	45·4	40·8
Midwives, &c., ...	495	417	434	45·8	40·4	43·7
Number Registered, ...	665	650	692	—	—	—
Removed, ...	—	—	—	—	—	—
Beyond Boundary, ...	—	2	—	—	—	—
Total cases of Ophthalmia Neonatorum, ...	665	652	692	26·8	27·3	29·2

* Calculated on Live Births notified. "Doctors found in attendance" are included in "Doctor in attendance," and deducted from "Midwives," &c.

Of the total cases 57 of the more severe type were removed to hospital, and the others were treated at home or at Child Welfare Centres by the nurses, who made 3,851 visits in this respect.

The period at which symptoms appear is given in the following summary, which shows considerable uniformity with regard to the interval after birth at which ophthalmia develops :—

Cases occurring at Age—	1926	1927	1928
– 12 hours, ...	52	47	56
– 4 days, ...	262	234	245
– 8 ,, ...	227	215	250
+ 8 ,, ...	124	154	141
	665	650	692

Association with Syphilis.—Swabs of the discharge from eyes are obtained from as many cases as possible for examination for gonococcus, and the results are shown in the following table, together with information as to association with clinical syphilis, verified by bacteriological tests or otherwise. Of the swabs examined for gonococcus only, about 11 per cent. proved positive, which is the same percentage as for the preceding year.

Among the gonococcal cases only two were associated with syphilis, and two also among the non-gonococcal cases :—

	Gonococcal.			Non-Gonococcal.			Unclassified.			Total.		
	Total Cases	Syphilis present	Per Cent. with Syphilis	Total Cases	Syphilis present	Per Cent. with Syphilis	Total Cases	Syphilis present	Per Cent. with Syphilis	Total Cases	Syphilis present	Per Cent. with Syphilis
1926,	59	1	1·7	395	1	0·3	211	—	—	665	2	0·3
1927,	47	2	4·3	364	1	0·3	239	—	—	650	3	0·5
1928,	50	2	4·0	393	2	0·5	249	—	—	692	4	0·6

Although the number of cases of ophthalmia neonatorum reported is considerably higher than that of the preceding year, those of gonococcal origin, 50 cases during 1928, are only slightly more numerous than the number in 1927. The number of cases of gonococcal ophthalmia represents a rate of 2·1 per 1,000 of all births occurring during 1928, compared with 2·0 in 1927. In 1919 the rate was 10·34.

Gonococcal Cases.—The results of treatment of this group of cases were very satisfactory. Of the 50 cases, all recovered with no corneal defect or blindness, with the exception of 7, who died.

Non-Gonococcal Cases.—Of this group 386 recovered without defect, and in no instance was there loss of sight or even corneal scar remaining :—

RESULT.	1926		1927		1928	
	No Syphilis	Syphilis Present	No Syphilis	Syphilis Present	No Syphilis	Syphilis Present
GONOCOCCAL—						
No Corneal Scar, ...	51	1	41	2	40	2
Corneal Scar remaining						
In one eye—						
Sight not impaired, ..	2	—	—	—	1	—
,, impaired, ...	—	—	—	—	—	—
Blind, ...	2	—	—	—	—	—
In both eyes—						
Sight not impaired, ...	—	—	—	—	—	—
,, impaired, ...	—	—	—	—	—	—
Blind, ...	—	—	—	—	—	—
Removed, ...	—	—	—	—	—	—
Died, ...	3	—	4	—	7	—
	58	1	45	2	48	2
NON-GONOCOCCAL—						
No Corneal Scar, ...	385	1	358	—	386	1
Corneal Scar remaining						
In one eye—						
Sight not impaired, ...	1	—	1	—	—	—
,, impaired, ...	—	—	1	—	—	—
Blind, ...	—	—	—	—	—	—
In both eyes—						
Sight not impaired, ...	—	—	—	—	—	—
,, impaired, ...	—	—	—	—	—	—
Blind, ...	—	—	—	—	—	—
Removed, ...	—	—	—	—	2	—
Died, ...	8	—	3	1	3	1
	394	1	363	1	391	2

Result.	1926		1927		1928	
	No Syphilis	Syphilis Present	No Syphilis	Syphilis Present	No Syphilis	Syphilis Present
Unclassified—						
No Corneal Scar, ...	206	—	239	—	248	—
Corneal Scar remaining ...	—	—	—	—	—	—
Died, ...	3	—	—	—	1	—
Removed, ...	2	—	—	—	—	—
	211	—	239	—	249	—
Total, ...	663	2	647	2	688	4

PUERPERAL FEVER.

The following table summarises the cases and mortalities, &c., during the past seven years:—

	Cases	Deaths	Case Mortality per cent.	Cases per 1,000 Births	Deaths per 1,000 Births
1921,	321	72	22·4	10·8	2·4
1922,	294	94	32·0	10·4	3·3
1923,	278	72	25·9	10·4	2·7
1924,	239	61	25·5	9·5	2·4
1925,	300	68	22·7	11·8	2·3
1926 (Old City),	307	69	22·5	12·6	2·8
1927,	277	61	22·0	11·7	2·6
1928,	413	89	21·5	17·5	3·8

In the table on page 45, it is shown that puerperal fever in 1928 was responsible for nearly 40 per cent. of the total deaths from maternal causes. It is always the most important fatal cause in that group. During 1928 there were 413 cases of puerperal fever, which is the highest number recorded and compares with 277 during the preceding year. This large increase was due to a higher prevalence generally, and also to a very considerable series of associated cases in one of the lying-in hospitals during the spring of the year. In May, 47 cases were recorded, and in April, 44. There were 125 cases in institutions, mostly due to the outbreak mentioned above.

Less significance attaches to cases registered in wards as the occurrence of sepsis is more or less related to the number of births in these wards. An analysis of cases during the year 1927 in certain artisan wards as against the residential wards showed rates of puerperal sepsis per 1,000 births of 9·9 and 7·8 in Calton and Mile-End, compared with 8·8 and 9·7 in Pollokshields and Langside respectively, and death-rates per 1,000 births were 4·9 and 1·3 in the two artisan wards, compared with 2·9 in Pollokshields. There were no deaths in Langside Ward. The corresponding comparisons for all maternal deaths were 9·9 in Calton, 3·9 in Mile-End, 2.9 in

Pollokshields, and no deaths in Langside. It is thus seen that although there is an apparently equal liability to infection in good class as well as poor class districts, the death-rate of the latter is considerably heavier than the former.

Among the 413 cases registered in 1928 there were 89 deaths, which is equal to a case mortality of 21·5 per cent. This is only slightly lower than the rate for the preceding year despite the large increase in the number of cases, many of which in the institutional outbreak referred to were reported to be mild. The case rate per 1,000 births was 17·5, which is considerably in excess of any previous rate, and almost double that of 1924. The mortality was also heavy, the deaths per 1,000 births being 3·8, which is also the highest recorded.

A special analysis of all cases admitted to Belvidere Hospital was instituted during 1927. This is again repeated in respect of the 1928 cases, and will be found in the report of that hospital in Part II.

The following table gives an analysis of the cases and deaths during 1928 in relation to attendances at birth :—

Puerperal Sepsis—Cases and Deaths occurring in Glasgow during the Year 1928.

	Births	Total Cases.	Cases per 1,000 Births.	Deaths.	Deaths per 1,000 Births.	Case Mortality per cent.
Doctors' cases, ...	6,858	116*	16·9	26	3·8	22·4
Midwives' Cases, ...	10,261	120†	11·7	22	2·1	18·3
Maternity Hospital—						
Indoor, ...	2,655	70	26·4	21	7·9	30.0
Outdoor, ...	3,571	31	8·7	6	1·7	19·4
Govan Cottage Hospital,	260	8	30·8	1	3·8	12·5
Parish Hospitals—						
Duke Street, ...	286	4	14·0	3	10·5	75·0
Oakbank, ...	241	4	16·6	1	4.1	25·0
Stobhill. ...	649	36	55·5	11	16.9	30·6
Lock Hospital, ...	67	2	29·9	—	—	—
No one (Abortions), ...	—	19	—	4	—	—
Beyond City, per Glasgow Institutions, ...	—	4	—	1	—	—
Institutions and others with no cases, ...	197	—	—	—	—	—
Total, ...	25,045	414	16·5	96	3·8	23·2

*In 17 cases assisted by Midwives, and in 10 by District Nurses.

†In 32 cases assisted by Doctors.

In the above table the births given include those in institutions in the City, but transferable to areas outwith Glasgow. For 48 additional notifications changed diagnoses were received.

The increased incidence of puerperal fever, especially its recurrence, sometimes in grave form, in maternity institutions has given rise to considerable anxiety. These outbreaks have been carefully investigated, and it is intended to report on them fully as soon as the information regarding a recent one is complete.

SECTION IV.

INFECTIOUS DISEASES.

Among the group known as the major infectious diseases experience during the year was favourable. The enteric fever group of diseases was less than half of the preceding year and the second lowest recorded. The decline in scarlet fever was even more accelerated during 1928 as compared with the previous year, while diphtheria, which had manifested an increased prevalence since 1915, was, as compared with 1927, definitely lower in incidence.

During the earlier part of the year the presence of an epidemic of measles was severely felt, particularly among young children. The first quarter of the year was also marked by a comparatively high incidence of acute pneumonia. As regards this infection and the other respiratory diseases, however, the weather of the last quarter of the year was much more favourable, so that the vital statistics of this period were represented by the low figure of 13·1 per 1,000, and constituted a record rate for these three months. The vital statistics of the last quarter of the year largely reflect the incidence of respiratory disease in the City. Whooping-cough was present throughout as a sustained outbreak rather than in epidemic form· These three affections, which destroy life by attacking the lungs, are nowadays the most serious and most refractory among the diseases due to infection.

In the following pages are given the usual information bearing upon the incidence of infectious diseases, along with one or two special reports of administrative significance· These are (1) the description of the outbreak of poliomyelitis (infantile paralysis) which appeared during the latter half of the year, an unusual experience in Glasgow; (2) the description of the behaviour of scarlet fever in two city schools; (3) a note on scarlet fever cases treated at home; and (4) a note on the incidence of the enteric group of diseases and on encephalitis lethargica (sleepy sickness).

The case rates are here summarised for certain of the diseases since 1913 :—

GLASGOW.—CASE-RATE PER MILLION OF THE POPULATION FOR ALL CASES OF INFECTIOUS DISEASES REGISTERED SINCE 1913.

YEAR	Typhus Fever.	Enteric Fever.	Continued and Undefined.	Puerperal.	Smallpox.	Scarlet Fever.	Diphtheria and Membranous Croup	Cerebro-Spinal Fever.	Phthisis.	Non-Pulmonary Tuberculosis.	All Others.	TOTAL.
1913,	39	232	7	144	...	4,005	1,934	35	2,552	...	26,247	35,195
1914,	18	340	7	206	...	5,337	1,440	45	2,284	1,088[1]	21,675	32,440
1915,	9	248	5	175	...	5,973	1,257	167	2,169	1,375	25,389	36,667
1916,	17	158	8	178	...	3,719	1,220	131	2,285	1,270	17,001	25,987
1917,	1	82	4	148	...	1,634	1,146	75	2,435	1,433	27.005	33,963
1918,	49	128	12	151	1	1,193	1,379	67	2,258	1,273	16,045	22,556
1919,	30	103	8	163	5	2,443	1,626	72	1,834	1,083	21,359	28,726
1920,	8	204	13	267	477	3,378	1,809	76	2,009	1,063	25,509	34,813
1921,	6	100	7	299	19	3.272	1,727	56	1,902	1,061	23,965	32,414
1922,	18	79	6	272	...	3,212	1,561	62	1,806	970	31,419	39,405
1923,	2	116	20	255	...	3,277	1,623	59	1.584	1,133	25,453	33,522
1924,	...	75	17	216	2	2,905	1,733	60	1,669	1,114	30,259	38,050
1925,	...	40	8	273	...	3,472	1,581	56	1,457	1,016	30,959	38,862
1926,*	7	91	4	279	...	4.252	2,082	60	1,572	907	31,430	40,684
1927,	...	131	4	245	...	3,641	2,685	70	1,435	974	30.870	40,055
1928,	...	51	3	360	...	2,822	2,293	89	1,503	965	27,895	35,981

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[1] Non-pulmonary tuberculosis made compulsorily notifiable, July, 1914.

*Rates for 1926 are for City area before extension.

DISEASES FORMERLY CALLED "PRINCIPAL ZYMOTIC DISEASES."

The death-rates for several periods have been :—

1881-90,	3·600	per 1,000 living.	1922,	1·997	per 1,000 living.
1891-1900,	3·282	„	1923,	1·457	„
1901-1905,	2·660	„	1924,	1·702	„
1906-1910,	2·450	„	1925,	1·245	„
1911-1915,	2·424	„	1926,	1·233	„
1916-1920,	1·607	„	*1927,	1·127	„
1921,	1·116	„	1928,	1·202	„

* Diarrhoea over 2 years excluded.

In this comparison only those infectious diseases that have been notifiable for most of the period given are included.

SMALLPOX AND VACCINATION.

Smallpox.—The City has again escaped infection with smallpox, which has shown an increasing prevalence throughout England and Wales during the past five years, An outbreak of smallpox of a mild type occurred in Forfarshire in midsummer and opportunity was given to the medical staff to visit and examine the cases. As a precautionary measure against the spread of infection and the possibility of mild smallpox being mistaken for chickenpox, a circular letter descriptive of this mild form was issued to medical practitioners on 6th July.

Vaccination.—The total number vaccinated at the clinics held at Child Welfare Centres in the various districts was 2,539 compared with 2,351 during the preceding year.

The following table shows the numbers of children vaccinated at the various Centres during the past three years:—

STATEMENT SHOWING NUMBER OF INFANTS VACCINATED AT THE CHILD WELFARE CONSULTATIONS DURING THE YEARS 1926-1928.

Centre	1926	1927	1928
Public Health Office, ...	512	465	408
Garngad, ...	82	72	88
Port Street, ...	64	85	131
Maryhill, ...	208	176	189
Govan Town Hall, ...	179	96	128
Adelphi Street, ...	254	215	258
Partick, ...	94	101	123
Weir Street, ...	213	75	118
Bridgeton, ...	917	750	725
Shettleston, ...	162	130	246
Campbellfield Street.	17	—	—
Cowcaddens, ...	105	28	19
Elder Hospital, ...	111	103	82
Yoker, ...	9	9	—
Springburn, ...	—	46	24
	2,927	2,351	2,539

VACCINATION (SCOTLAND) ACT, 1907.

The following shows the number of declarations of conscientious objection to vaccination made each year since the Act came into operation :—

1907-10 (annual average),	2,119	1926, ...	5,485
1911-15 ,,	5,922	1927, ...	5,254
1916-20 ,,	6,182	1928, ...	5,560
1921-25 ,,	5,318		

The number of conscientious objections to vaccination made during the year was 5,560, which is equal to 24 per cent. of the total births registered. This compares with 22 and 23, the respective percentages for the years 1927 and 1926. The highest percentage of objections to vaccination was 41 in Fairfield, followed by Govan with 38 and 37 in Springburn. In Kelvinside there were only 6 per cent. of infants exempted. Particulars of these are contained in Table XXII of the Appendix.

The following abridged table indicates the percentages before the Conscientious Objection Act came into operation and for the year 1914, when the lowest percentage of successful vaccinations was reached, namely 51·7. Within recent years there has again been a tendency towards reduction.

Table showing Results of Primary Vaccination of Children born during several years.

(From the Detailed Annual Reports of the Registrar-General).

Year	Successfully vaccinated Per cent.	Insusceptible of vaccine disease Per cent.	Died before vaccination Per cent.	Conscientious objection to vaccination Per cent.	Vaccination postponed Per cent.	Unaccounted for Per cent.
1906,	82·9	0·5	10·6	0·2	0·8	5·0
*	* *	*	* *	* *	*	*
1914,	51·7	0·9	12·1	25·1	1·8	8·4
*	* *	*	* *	* *	*	*
1924,	64·5	1·5	8·4	19·9	1·8	3·9
1925,	63·0	1·3	8·4	22·0	1·8	3·5
1926,	61·7	1·8	8·1	22·8	1·8	3·8

TYPHUS FEVER.

Only eight cases of typhus fever have occurred since 1923 and these were recorded in 1926.

ENTERIC INFECTIONS.

The cases notified during the year numbered 104. Of 57 cases verified, 33 were attributable to bacillus typhosus, while 24 were paratyphoid infections. The fall in the incidence compared with last year is accounted for by the absence of any notable outbreak of the disease. There occurred, however, two small outbreaks (*a*) in a general hospital and its associated convalescent home (9 cases); and (*b*) in one of the fever hospitals (14 cases) all due to paratyphoid B. infections. The following table shows the number of cases in connection with which bacteriological examinations were made, the total number of home contacts, &c., and the number found positive :—

CONTACTS.

	B Typhosus	Paratyphoid (B).	Totals.
Number of verified cases, ...	33	24	57
Number of cases in connection with which urine and fæces were examined,	33	18	51
Number of contacts + 10 years, ...	94	44	138
Number of contacts − 10 years, ...	40	30	70
Total number of contacts, ...	134	74	208
Number of contacts examined, ...	63	44	107
Number found positive, ...	4	...	4

Four contacts were found positive. Of these, two, the father and the mother of one patient, were already known to be chronic carriers. The other two were instances of recent but latent infections. The source of infection was traced only in these 3 cases and in the 9 cases comprising the small outbreak in a general hospital. This gives a proportion of cases where the infection was traced as 12 out of 57, that is 21 per cent. In the remaining 46 cases, in spite of the examination of contacts, no source of infection was found. During the year the procedure of taking blood from contacts for Widal examination was adopted as a preliminary to subsequent bacteriological examination of urine and stools. Accordingly blood for Widal reaction was taken wherever practicable, and this was done in 21 contacts.

Multiple cases in the same house.—There were three instances in which more than 1 case occurred in the same house. In two instances, 2 patients were affected, and in the remaining instance 3 patients were affected.

Age and Sex Incidence of Enteric Cases as shown from the following Table:—

	– 5	– 10	– 15	– 20	– 25	– 35	– 45	– 55	– 65	65 +	Total.
Males, - -	5	6	2	4	3	5	2	1	—	—	28
Females, -	1	3	2	7	3	2	5	3	3	—	29
Totals,	6	9	4	11	6	7	7	4	3	—	57

Institutional Cases.—Institutional cases, excluding those comprising the small outbreak in a general hospital, numbered 5, while 6 received their infection outwith the City.

An outbreak of paratyphoid B. fever occurred in a general hospital during the early months of this year. This is of some interest epidemiologically as the infection spread from that institution to a country home. The cases occurred chiefly in infants between the ages of one year and six years, but also involved certain members of the nursing staff. In the main hospital 6 children and a nurse were infected in the same ward.

(a) *General Hospital.*

Number.	Age.	Date of Sickening.	Admitted to Hospital.	Disease.	Admitted to Fever Hospital.
Case 1,	$2\frac{1}{2}$	20/1/28	30/12/27	Cerebral Diplegia,	29/1/28
,, 2,	$1\frac{8}{12}$	28/1/28	18/1/28	Infantile Paralysis,	11/2/28
,, 3,	6	8/2/28	27/1/28	Diabetes,	15/2/28
,, 4,	$\frac{7}{12}$	10/2/28	24/1/28	Broncho-Pneumonia, Died 15/2/28	
,, 5,	$\frac{6}{12}$	14/1/28	27/12/27	Gastro-Enteritis,	18/2/28
,, 6,	Nurse	17/2/28	...	...	...
Case 7,	$\frac{6}{12}$	Indefinite	3/1/28	Marasmus,	3/3/28
(b) *Country Home.*					
,, 8,	11	Indefinite	27/12/27	Burns,	17/2/28
,, 9,	Nurse	20/2/28	...	...	2/3/28

Widal reactions were done in respect of all children in the infected wards at the general hospital and the country home, and, in addition, in respect of the nursing staff. In cases where the blood reaction was positive, the fæces were examined. All bacteriological work was carried out in the laboratory of the general hospital. It may be mentioned that the milk supply to the institutions is examined bacteriologically as a routine every week and is obtained from tuberculin tested herds and tinned at the farm.

Source of Infection.—The source of infection appears to be Case No. 5, who was admitted to the general hospital suffering from gastro-enteritis on 27/12/27. The sickening date of this child's illness was given as 14/1/28. but the child having been admitted with gastro-enteritis suggests that the sickening date was prior to admission to the hospital on the 27/12/27. This child was transferred to the country home on 6/1/28 and retransferred to the general hospital on 27/1/28. The outbreak having been determined by this case, thereafter developed into a series of dropping cases. Two nurses contracted the disease and their removal from duty possibly terminated the outbreak.

The illnesses were all mild, the course of the temperature and symptoms being difficult to separate from the symptoms of illness from which the patients were suffering. The recognition was based on clinical suspicion verified by bacteriological examination.

Outbreak in Knightswood Hospital.—From the 7th February until the 21st May, 14 cases of fever due to the B. Paratyphosus B. and one case of fever due to the B. Typhosus occurred in the hospital at varying periods after the date of admission. The single case of typhoid and thirteen of the fourteen cases of paratyphoid fever occurred in one of the pneumonia wards, the remaining case of paratyphoid occurring in a scarlet fever ward. Twelve of the fourteen cases of paratyphoid were children, and the remaining two cases were adults—one of the latter being a nurse in attendance on the patients in the pneumonia ward, where the majority of the cases occurred. The infection of this group of cases was introduced into the ward by one or other of the three children who were admitted with pulmonary symptoms, accompanied by enteritis with green stools. Their disease ran a prolonged course, and their bloods when tested against the B. Paratyphosus B. reacted in dilutions of 1 in 500.

It is to be noted that after ten cases of paratyphoid fever, including the case of the nurse, were discovered and removed from the pneumonia ward, all the remaining patients were transferred to the observation pavilion, and the infected ward was thoroughly cleaned and disinfected on the 26th March, and reopened three days later for the admission of fresh cases of pneumonia. About one month after the pneumonia ward was reopened, one patient was found to have been admitted suffering from enteric fever due to the B. Typhosus, and not from pneumonia, and shortly afterwards three other patients developed paratyphoid fever in this ward.

The Widal test and examination of the urine and fæces of all the nurses in the infected ward were carried out with negative results, except in the case of one nurse, in whom the B. Paratyphosus B. was found in the fæces. This nurse, however, was not on duty in the pneumonia ward during the period of illness of the first ten cases referred to, so that she cannot have been responsible for the infection of these cases, but she commenced duty in this ward on April 30th, which almost exactly corresponds with the date of admission of the three cases of infection due to B. Para. B. Three subsequent examinations at weekly intervals of the fæces from this nurse were all found negative, and her period as a carrier was apparently very transient, although she may have been responsible for infecting the three cases.

In order to find a possible carrier, all the kitchen staff were tested in the same manner as the nurses, but with negative result. One patient, admitted to another ward with scarlet fever, developed paratyphoid fever twenty-eight days after admission, and the source of infection in this case was never discovered.

ENTERICA INFECTION.

Enteric Carriers in an Asylum.—There are 10 definite carriers at present in the Institution, and these are accommodated in the isolation block recently built for the purpose of accommodating such carriers. In addition to these, there are 49 patients who show a positive Widal reaction. All these patients have been examined at least six or seven times for the presence of enteric fever organism, with negative result. The routine examination of the blood of all new patients is carried out, and those giving a positive reaction are segregated until repeated examinations of urine and fæces have been made. The specimens are examined by the Pathologist at the Institution. There were no cases of enteric fever during the year.

The following table of death-rates since 1881 shows the marked decline which is taking place in this affection :—

1881-90,	... ·230 per 1,000	1921-25,	... ·012 per 1,000
1891-1900,	... ·215 ,,	1926,	... ·015 ,,
1901-10,	... ·127 ,,	1927,	... ·009 ,,
1911-15,	... ·058 ,,	1928,	... ·009 ,,
1916-20,	... ·023 ,,		

SCARLET FEVER.

The number of cases of scarlet fever registered during the year was 3,237, of which 3,010, or 93 per cent., were removed to hospital. The percentage of cases treated in hospital is again slightly lower, owing to the latitude now being allowed as regards home treatment where conditions are at all suitable. The proportion of cases removed to hospital was at one time as high as 98 per cent. The accommodation in most of the houses in Glasgow in which the disease occurs makes it practically impossible, however, for all but a relatively small proportion to be allowed to remain at home. The disease was considerably less prevalent during 1928, when the rate per 1,000 of the population was 2,822, compared with 3,641 in 1927 and 4,252 in 1926. The rate has not been lower since 1919. Particulars of cases, rates, &c., are given in Appendix Tables XVII and XVIII, while the monthly prevalence is shown in Table XIX.

The death-rate from this disease since 1881 is shown in the following table :—

1881-90,	... ·490 per 1,000	1921-25,	... ·064 per 1,000
1891-1900,	... ·295 ,,	1926,	... ·081 ,,
1901-10,	... ·116 ,,	1927,	... ·039 ,,
1911-15.	... ·163 ,,	1928,	... ·030 ,,
1916-20,	... ·060 ,,		

The fatality rate in 1928 is again lower, probably because of the reduced incidence of the disease, but the very definite drop in the fatality during the past two years has been coincident with the more general use of serum treatment in hospitals.

Secondary Cases.—There were 34 cases of scarlet fever sickening in households after disinfection for a previous case. The percentage occurring within one week after disinfection for a previous case was 71, the second week 23, and 6 over that period.

Return Cases.—The number of return cases—*i.e.*, cases sickening after return of a previous case from hospital—has remained at 2 per cent. of the dismissals during the past ten years. Of the return cases, 26 occurred within one week of the hospital dismissal, 28 within two weeks, and 18 over that period.

SCARLET FEVER IN SCHOOLS.

Dr. James L. Halliday contributes the following notes :—

The discovery of the association of the streptococcus hæmolyticus with cases of scarlet fever has complicated our conceptions of the epidemiology of the disease. It is now recognised that scarlet fever is only one of various responses to infection by this virus. According to certain writers, other responses include instances of sore throat, erysipelas, puerperal fever, and broncho-pneumonia. The part played by cases of sore throat without rash in the dissemination of scarlet fever is indicated in the two following examples of school infection. The problems arising out of these and other examples collected during the year are reserved for later discussion.

GROUPINGS OF SCARLET FEVER AND SORE THROAT IN TWO DAY SCHOOLS.

Example (1).—In a country school three cases of scarlet fever were succeeded by a series of sore throats occurring at short intervals, and a fourth case of scarlet fever did not occur till twenty-two days after the third case had sickened.

This is a country school situated on the city boundary. Its scholars, of ages 5 to 14, number 216, and are divided into six classes. The school opened after the summer holidays on 14th August, and the exact incidence of sore throats among the pupils is doubtful up to the end of August.

Cases of scarlet fever, three in number, sickened on 22nd August, 3rd September, and 8th September, in three different classes. From 1st September, to 9th October twelve cases of sore throat without rash occurred, and these involved all six classes in the school. (See Table I.) A scholar attending another school, who was a brother of one of the cases of scarlet fever, also developed sore throat. Of the cases of sore throat only two had previously suffered from scarlet fever. A fourth case of scarlet fever occurred on 30th September; this was the second case in its class and occurred 27 days after the previous case.

The criterion of sore throat was that the child should be sufficiently ill to be absent from school.

In all cases the fauces and tonsils were bright red. In some the tonsils were spotted, and in two instances the throats were dirty, and presented an appearance not unlike that seen in cases of diphtheria, but consecutive swabs were negative for K.L.B. In ten of the cases the tongues remained generally coated, but in three instances there was definite peeling. In no case was there any trace of subsequent desquamation. The throats of each of the 13 cases of sore throat were swabbed, and in ten instances hæmolytic streptococci were found. From the Table it will be seen that in no instance did the time between the dates of sickening of sore throats exceed seven days.

No other case of scarlet fever was found in the district, although an actice search was undertaken for missed cases. Also for six months after the last case of sore throat there was no further absenteeism due either to scarlet fever or to sore throat.

The following conclusions may be drawn :—

(1) A series of sore throats may act as the connecting link between two apparently sporadic cases of scarlet fever.

(2) The epidemiological field unit in a day school is not the individual class, but the school as a whole.

Example (2).—In a large urban school serving a poor, working-class district, there were 34 cases of scarlet fever during the autumn term. The outbreak affected 17 of the 25 classes, and was associated with an unusual prevalence of sore throat. The type of disease was mild, and many cases were not diagnosed until after a special search had been made.

This is a day school in a working-class district attended by 1,232 pupils, of ages 5 to 14 years, divided into 25 classes, viz., 8 infant classes (ages 5-7 years); 7 junior classes (ages 7-10 years); 8 senior classes (ages 10-14 years); and two classes for blind children, of varying ages. The school opened after the summer holidays on 21st August and closed for Christmas holidays on 21st December.

It is not the practice in Glasgow to inquire specially into cases of scarlet fever in a day school unless more than two cases have occurred in one class. On 21st October the school was visited for the first time when it had been observed that three cases had occurred in class "L," in addition to six other cases scattered throughout the school. (See table.) As a result of this visit, a child in class "L" was found to be desquamating and five other desquamating children were found in the school. After this date all cases ill with sore throat were excluded from school.

Table II epitomises the outbreak and the following points are of interest :—

(1) The outbreak reached its maximum in October. The cases sickening in each month were as follows :—

August, ...	0
September, ...	3
October, ...	18
November, ...	7
December, ...	6
January, ...	3
February, ...	0

(2) After 21st October 29 pupils suffering from sore throat were discovered; 18 of these absented themselves owing to the illness and 9 were excluded on discovery. Clinically, the fauces were red and inflamed, and, with the exception of three cases, the tongue was generally coated. In no instance was there evidence of any subsequent desquamation. Only three cases gave a history of previous scarlet fever. It is likely that many cases of mild sore throat were missed.

Two points are worth noticing :—

(*a*) 19 of the sore throats occurred during the second half of October—the month at which scarlet fever was at its peak—and 10 in November. No illness due to sore throat was reported in December;

(*b*) the number of sore throats was not related to the number of cases of scarlet fever in individual class-rooms, but bore a relationship to the number of cases in the school.

(3) Nine cases of desquamating scarlet fever were discovered in school, and between the dates of sickening and the dates of discovery there was an average delay of sixteen days. None of these pupils had been absent on account of illness. Five other cases attended school for two to five days after sickening. Thirteen of the 34 cases of scarlet fever, *i.e.*, 38 per cent., were, therefore, present among the school population during the period of their highest infectivity.

From these observations certain deductions may be made:—

(1) The official notification returns of scarlet fever must, in poorer quarters at least, be very incomplete.

(2) The prevalence of scarlet fever in a City is maintained partly, at any rate, by "missed" cases and by sore throats.

(3) The occurrence of sporadic cases of scarlet fever in a day school suggests that the virus is already influencing the school as a whole.

TABLE I.—RURAL DAY SCHOOL—CASES OF SCARLET FEVER AND SORE THROAT.

+ = Scarlet Fever. O = Sore Throat.

Number of Case	Date of Sickening	Date last at School	Classes and Average Age of Pupils A 5-6	B 6-7	C 7-9	D 9-11	E 11-12	F 12-14	Day of Illness when Swabbed	Hæmolytic Streptococci
1	August 22	August 22	–	–	+	–	–	–		
2	Sept. 1	Sept. 2	–	–	–	–	O	–	10th	–
3	,, 3	,, 4	–	–	–	+	–	–		
4	,, 5	,, 5	–	–	–	–	–	–	6th	+
5	,, 8	,, 7	+	–	–	–	–	–		
6	,, 10	,, 7	–	–	O	–	–	–	2nd	+
7	,, 10	,, 7	–	–	–	–	O	–		
8	,, 13	,, 13	–	–	–	–	–	O	3rd	+
9	,, 14	,, 14	–	–	–	–	–	O	3rd	+
10	,, 15	,, 16	–	–	–	O	–	–	2nd	–
11	,, 16	,, 16	–	–	–	O	–	–	3rd	+
12	,, 21	,, 21	–	–	O	–	–	–	2nd	+
13	,, 23	,, 23	–	–	O	–	–	–	2nd	–
14	,, 30	,, 28	–	–	–	+	–	·	2nd	+
15	October 5	October 5	–	–	O	–	–	–	3rd	–
16	,, 7	,, 7	–	O	–	–	–	–	3rd	+
17	,, 9	,, 9	–	–	–	–	O	–	2nd	+

EXAMPLE II. URBAN DAY SCHOOL. TABLE SHOWING CASES OF SCARLET FEVER AND SORE THROAT OCCURRING DURING AUTUMN TERM.

Order of Sickening.	Date of Sickening.	Date of Booking.	Class and Age. A 5	B 5	C 5	D 6	E 7	F 7	G 8	H 8	I 8	J 9	K 9	L 10	M 10	N 10	O 11	P 12	Q B.C.*	Interval in Days between cases of Scarlet Fever.
1	Sept. 12	Sept. 14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	x	...	...
2	,, 25	Oct. 21	x1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13
3	,, 30	,, 1	x	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5
4	Oct. 1	,, 3	x	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	1
5	,, 1	,, 21	...	...	...	...	x1	...	...	...	...	...	...	...	...	...	...	...	...	1
6	,, 3	,, 21	...	...	...	x1	...	...	...	...	...	...	...	...	...	...	...	...	...	2
7	,, 4	,, 8	...	...	...	...	...	...	...	...	...	...	...	x2	...	...	...	...	...	1
8	,, 5	,, 21	...	...	...	...	...	...	...	...	...	...	...	...	...	x1	...	...	...	1
9	,, 7	,, 12	...	...	...	...	x2	...	...	..	...	...	...	...	...	...	...	...	...	2
10	,, 9	,, 10	...	...	...	...	...	...	...	x	...	...	...	...	...	...	..	...	...	2
11	,, 9	,, 10	...	..	...		...	x	...	...	...	...	...	...	...	...	...	...	...	2
12	,, 12	,, 21	x1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
13	,, 13	,, 13	...	...	...	...	...	...	...	...	...	...	...	x	...	...	...	...	...	1
	,, 16		...	...	...	.	...	...	...	...	...	...	...	0	...	...	. .	...	...	
	,, 17		...	...	...	...	...	...	...	...	...	...	...	0	...	...	..	...	...	
14	,, 20	,, 21	...	...	...	...	...	...	...	...	...	...	...	x0	...	...	...	...	..	7
15	,, 21	,, 31	...	...	...	...	...	...	...	...	...	...	...	x1	...	...	...	...	...	1
	,, 23		...	...	...	...	...	...	...	...	...	...	0	0	...	...	...	...	...	
	,, 24		0	...	...	...	0	...	...	...	...	0	0	0	...	...	...	...	...	
16	,, 25	,, 29	...	...	...	...	...	...	...	...	..	...	x2	...	...	...	...	...	...	4
17	,, 26	,, 26	...	...	...	...	...	...	...	...	...	...	x	...	...	...	...	...	...	1
18	,, 26	Nov. 16	...	...	x1	...	...	...	.	...	...	...	...	...	...	...	...	...	...	1
19	,, 26	,, 6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	x2	1
	,, 27		...	...	...	0	...	...	...	...	...	0	...	...	...	...	...	...	...	
	,, 28		...	...	...	0	0	...	...	...	...	...	0	...	...	...	...	...	...	
20	,, 29	,, 2	0	...	...	x	...	...	...	...	...	...	...	...	0	...	...	...	...	3
21	,, 31	,, 6	...	...	...	...	...	...	x2	...	...	...	...	...	...	...	...	...	...	2

Order of Sickening.	Date of Sickening.	Date of Booking.	Class and Age.																	Interval in Days between cases of Scarlet Fever.
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	
			5	5	5	6	7	7	8	8	8	9	9	10	10	10	11	12	B.C.*	
	Nov. 2		0								00									
	,, 5		0																	
22	,, 6	,, 16	0								x1									6
23	,, 10	,, 13		x																4
24	,, 10	,, 27													x1					4
25	,, 12	,, 13	0				0				0						x			2
26	,, 13	,, 14			x		0													1
	,, 14		0								0									
27	,, 15	,, 20		x																2
	,, 20																0			
28	,, 23	Dec. 3					x2													8
29	Dec. 1	,, 3								x										8
30	,, 15	,, 19						x												14
31	,, 21	,, 22						x												6
32	,, 21	,, 26						x												6
33	,, 26	,, 27															x			5
34	,, 27	,, 28						x												1
	Jan. 9	Jan. 11					x													
	,, 12	,, 14	x																	3
	,, 20	,, 22														x				8

*B.C.=Blind Class.
O=Sore throat
x=Scarlet fever.
x1=Scarlet fever discovered in school desquamating with no record of absenteeism.
x2=Scarlet fever attending school for several days after sickening.

The following notes prepared by Dr. R. J. Peters, Central Division, on observations in connection with home cases of scarlet fever during the year illustrate certain administrative difficulties arising out of the mild nature and high infectivity of the disease :—

A review was made of cases of scarlet fever which had either been entirely treated at home or which had remained at home for not less than fourteen days at the beginning of their illness. This fourteen days covers the conventional infective period in simple scarlet.

In the Central Division in 1928, there were 84 cases in the above categories. Sixty of these were never removed to hospital and 24 were removed after the fourteenth day of their illness. In Wards 12, 13, 14, and 15, which includes the poorer districts of the division, there were 14 cases—mostly remaining at home undiagnosed till the fourteenth day and at some time after that removed to hospital. Eleven secondary cases were traced to these, and the average time between the sickening of the first case and the secondary case was twelve days.

In Wards 16, 22, 24, and 25 (the better class districts) the number of home cases was 60, but here the majority were isolated and wholly treated at home. From these 60 there were infected 15 secondary cases, and the average time taken to infect was 9·6 days.

In Ward 23 there were ten cases and four of these were entirely treated at home. Of the ten, there could only be traced one secondary case, and the time elapsng between the sickening dates of this and its primary source was 17 days.

In all, the longest period elapsing between a primary and secondary case was 25 days, and in this instance the patient was being nursed at home. Of all the 84 cases only two gave rise to secondary cases in close or stair, and only one was known to have caused a definite case in his school class.

Eight cases occurred in houses overcrowded to the extent of more than three inhabitants per room. All these cases were left at home for at least a fortnight during the infective period of their illness—undiscovered, that is, without precautions *re* isolation, &c., and these gave rise to six secondary infections. If to these be added those occurring in slightly less overcrowded houses (upwards of 2½ persons per room) then the number of cases occurring in these partially overcrowded houses is 13, with 9 secondary cases. In no case was there any connection traced to puerperal fever or erysipelas.

DIPHTHERIA.

There was a definite reduction in the incidence of diphtheria during 1928, with a rate of 2,293 per million of the population, compared with 2,685 for the preceding year, which was the highest rate hitherto recorded. The disease appears to have been of a more virulent type, as the death-rate has increased from 100 to 122 per million.

The increased prevalence of the disease is probably associated with the school entrance of a larger proportion of children than usual, following the high post-war birth-rate. Many of these children will now be between 5 and 6 years of age. The proportion of cases occurring at the age period 5-10 years is almost equal to 40 per cent. of the total cases registered during 1928. Children of younger ages, *i.e.*, between 2 and 5, come next in incidence of attack. All but 91 of the total cases registered, 2,630, were removed to hospital. The maximum prevalence occurred in October, as shown in the Appendix Table XIX.

Diphtheria in Schools.

A troublesome outbreak of diphtheria occurred in one of the public schools in the outskirts of the City during the latter part of the year. The infection was absolutely confined to one class of children (aged about 6). The health record for the other classes of the school was excellent. In the particular class affected the outbreak began about the middle of August and there were seven cases notified during the two months following. These first seven cases were all females and the dates of sickening were spaced out more or less evenly throughout the period. A few days after the last female case the first male child sickened, followed six weeks later by a second male and one month after that by a third male. This last-mentioned case sickened on 30th November, and on the same date a pupil teacher who had been attached to the class also sickened. Between 13th and 22nd December, three more cases were notified, making a total of 13 cases in five months. All these cases were definitely clinical diphtheria, confirmed bacteriologically. The most of them were rather severe. The pupils in this class were swabbed on several occasions throughout the period mentioned, and a singularly low incidence of positive cultures was noted. The long periods of time elapsing between male cases is interesting. As so frequently happens in a class outbreak in a school the first group of cases occurred among children occupying adjacent desks.

Out of a total of 40 pupils in this class, 32 lived in houses belonging to a Corporation Housing Scheme, 8 came from old houses of a considerably poorer class, the condition of which regarding overcrowding may be shortly expressed by the fact that there are 104 houses of two apartments containing 520 inhabitants. These latter children were generally poorer in physique and in appearance than the others. It is worthy of note that only one case of diphtheria occurred among the children from the poorer houses whereas the remaining 11 were from the Corporation Housing Scheme. The incidence therefore amongst the poorer children was one in eight as compared with one in three in the case of the others.

It seems as though this outbreak had been caused by an intermittent carrier of virulent bacilli who was not detected at any of the routine swabbings of throats and noses which were carried out.

The following table shows the death-rates per 1,000 living since 1881 :—

1881-1890,	·280	per 1,000 living.	1916-20,	·143	per 1,000 living.
1891-1900,	·231	,,	1921-25,	·122	,,
1901-1905,	·134	,,	1926,	·120	,,
1906-1910,	·205	,,	1927,	·100	,,
1911-1915,	·187	,,	1928,	·122	,,

ERYSIPELAS.

Of 922 cases of erysipelas registered during the year, 474 were removed to hospital. During the previous year there were 848 cases. The case rate for 1928 is 804 per million of the population.

DISEASES OF THE CENTRAL NERVOUS SYSTEM.

In 1906, an epidemic of cerebrospinal fever began in Glasgow and the disease was made compulsorily notifiable in the City in the following year. The occurrence of cases of poliomyelitis and polio-encephalitis attracted attention in 1918, and after a report on the outbreak these diseases were also added to the list of those notifiable, as from 3rd September, 1918.

Regulations were later issued by the Scottish Board of Health making these diseases notifiable throughout the country.

Cerebro-spinal Fever.—During 1928, cerebro-spinal fever was recorded on 102 occasions, which is the highest number since 1916. All but four were treated in Local Authority Hospitals or other institutions. As usual the cases occurred for the most part in the early months of the year, 37 being recorded in the first quarter alone.

There was no special grouping, the highest number recorded in any one ward being 8 in Gorbals, while 7 were registered in Springburn and 6 in Calton. It would seem that the cases occurred in wards with a large child population. This is confirmed by the age distribution which shows that 42 of the cases were under one year of age. The incidence of the disease was higher among males.

Encephalitis Lethargica.—Although 64 notifications were received during the year, only four cases were adjudged to be definite and to have sickened in 1928. Thirty of the notifications represented chronic cases discovered for the first time and 30 were suffering from other affections.

During the year 34 individuals suffering from chronic encephalitis died, but in 14 instances death was due to intercurrent diseases. Five deaths in addition were assigned to acute encephalitis, but it is doubtful what proportion, if any, of these were attributable to this affection.

Early in 1929 inquiries were made into all known surviving cases of chronic encephalitis. These numbered 528 and were distributed as follows:—in hospital, 86; at home, 429; and 13 were untraced. Of the 86 hospital cases 12 were in mental institutions, 26 were in the Special Ward at Stobhill Hospital, 39 were in Parish Hospitals, and 9 were in other institutions. Of the 429 home cases 76 were children still of school age, of whom 55 were able to attend school. Of the 353 adults 197, or 56 per cent., were stated to be fit for work. Among the patients at home 29 were completely bedridden.

Acute Poliomyelitis.—The occurrence of an unusual number of cases of this disease during the summer and early autumn led to the issue of a circular letter to medical practitioners on 25th September, drawing their attention to the facts and describing the symptoms. Special inquiry was made in connection with every case and the information collated by Dr. James L. Halliday, one of the Divisional Medical Officers, was published in the Journal, "The Medical Officer," on 13th April, 1929, of which report the following is a somewhat abridged version :—

OUTBREAK OF POLIOMYELITIS.

The first recorded outbreak of poliomyelitis in Glasgow occurred in 1928. During the previous five years the cases registered showed a slight progressive increase, the numbers being as follows :—1923, 4 cases; 1924, 9 cases; 1925, 8 cases; 1926, 10 cases; 1927, 13 cases. These figures probably underestimate the actual incidence, and must be taken with reserve, as later inquiry showed that certain cases sickening in these years were never officially notified. Incomplete notification and non-recognition of the illness in its early stages are features common to all infectious diseases of the central nervous system.

In 1928 the Health Department received information of 112 definite acute cases. A considerable delay usually took place between the date of actual sickening of a case and its official discovery. The outbreak was always, so to speak, being pursued, and only towards its decline, and after both medical practitioners and hospitals had been specially circularised, did notification and information become topical. Every effort was made, however, to collect the fullest information. Each case was visited by a medical officer, who made an investigation which included inquiries into the nature of the acute stage, the existence of illnesses among other members of the family, the movements of the patient, and the possible source of infection.

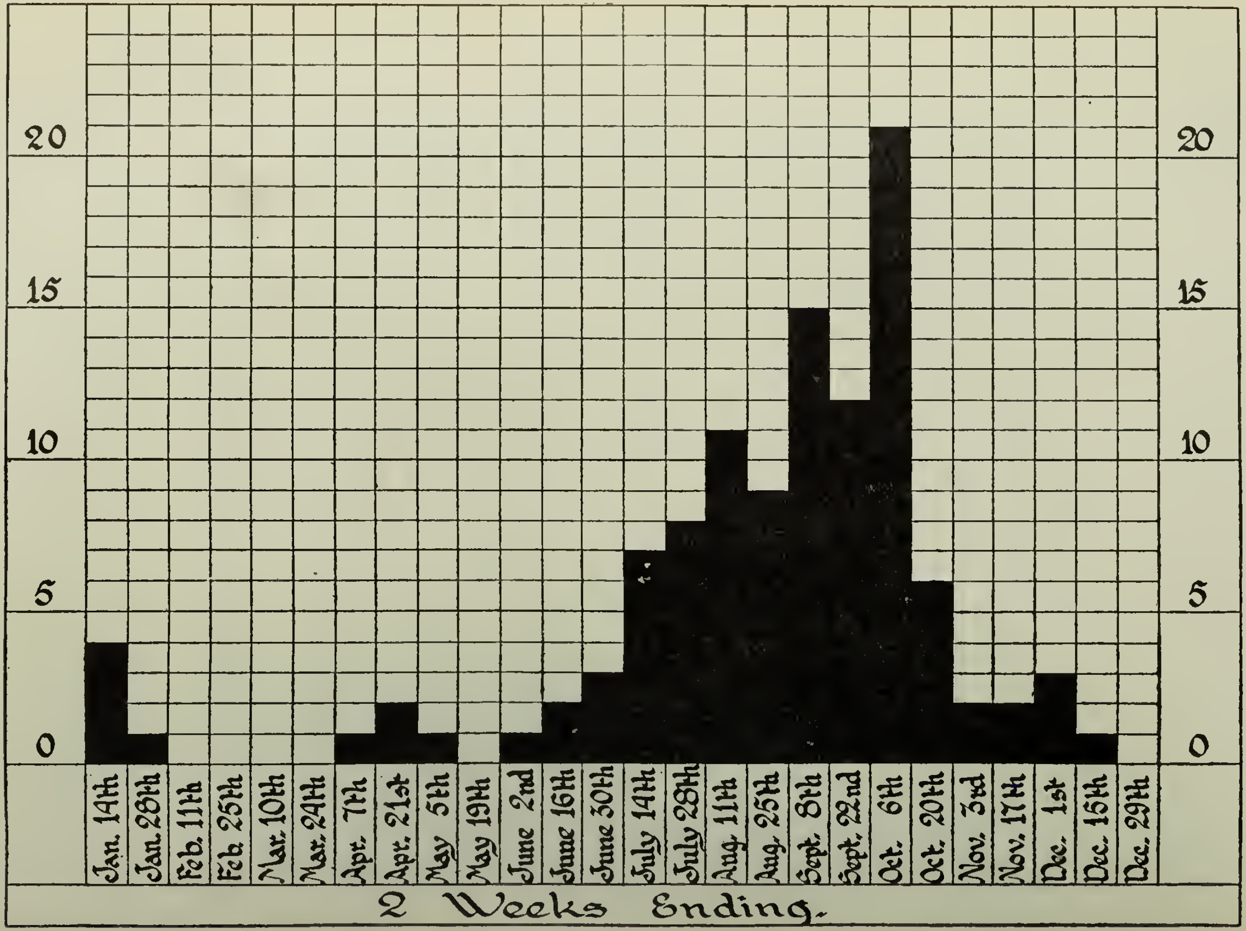
A. Epidemiology.

(a) *Distribution in Time.*—The monthly dates of sickening of the 112 cases were as follows :—

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.	Oct.	Nov.	Dec
Cases, ...	5	—	—	4	1	5	16	25	28	22	5	1

The outbreak was confined to the four months—July, August, September, and October, The accompanying chart is a histogram showing the number of cases sickening in fortnightly periods. The graph rises slowly and drops suddenly. Its shape should be compared with that of the histogram for the outbreak of epidemic encephalitis in 1924, in which the rise was rapid and the fall more gradual.[1]

(b) *Distribution in Space.*—Though the cases occurred throughout the City as a whole, they were not evenly distributed, and a tendency to focus grouping was noticeable, a feature also found in the outbreak of encephalitis in 1924.



POLIOMYELITIS—CASES SICKENING IN FORTNIGHTLY PERIODS DURING 1928.

(c) *Age and Sex Distribution.*—The age and sex distribution of the cases is given in the table which follows :—

TABLE SHOWING AGE AND SEX GROUPING.

	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-15	-20	-25	-30	-35	Total.	Per cent.
Males, ...	3	21	11	10	5	2	2	4	3	—	2	2	—	—	—	65	58
Females, ...	3	7	11	9	2	4	—	—	3	—	2	2	2	1	1	47	42
Total, ...	6	28	22	19	7	6	2	4	6	—	4	4	2	1	1	112	100
Percentage—																	
Males, ...	4·6	32·3	16·9	15·4	7·7	3·1	3·1	6·2	4·6	—	3·1	3·1	—	—	—	100	—
Females, ...	6·4	14·9	23·4	19·1	4·3	8·5	—	—	6·4	—	4·3	4·3	4·3	2·1	2·1	100	—
Total, ...	5·4	25·0	19·6	17·0	6·2	5·4	1·8	3·6	5·4	—	3·6	3·6	1·8	0·9	0·9	100	—

Nearly three-quarters of the cases—73 per cent.—occurred in children under five years. The disease fell most heavily on children of ages 1 to 3, and especially on the age group 1-2, which provided a quarter of the total cases. Infants under one year and children in the age group 4-5 were affected to a much lesser extent. The youngest infant attacked was aged seven weeks. As regards sex, the incidence among males, except in the later age periods, definitely exceeded that among females, the ratio being 58 per cent. to 42 per cent. This is the proportion generally maintained, and the figures are comparable to those quoted by MacNalty[2] for Massachusetts (1907, 1910) and for New York (1916), where the proportions were 56 per cent. of males to 44 per cent. of females. The age group of election for males was between one and two years, and for females between two and three years. The excess of females over males in the higher age groups is not a usual finding.

(d) *Social Distribution.*—The disease apparently showed no predilection for any social class, and each section of the community rendered an appropriate quota to the infection. For example, the percentage of the total population inhabiting houses of one, two, three, four (and over) apartments is 17·0, 46·4, 20·5, and 16·1 respectively; whereas the percentage of total patients which these yielded was 17, 51, 17, and 15 respectively.

(e) *Mortality.*—During the year there were eight deaths. Four of these were in males of ages 2, 3, 6, and 11 years, and four in females of ages 3 (2 cases), 8, and 17 years. The deaths all occurred during the outbreak proper, and there was no indication of a progressive increase of "virulence."

	July	Aug.	Sept.	Oct.
No. of Cases, ...	16	25	28	22
No. of Deaths, ...	1	2	3	2

As it is likely that many mild or abortive cases escaped recognition altogether, the case mortality is best calculated by considering the number of deaths in relation to the number of cases showing actual paralysis. Of the 112 cases which came to notice, three were of the meningeal type without paralysis, and these may be discarded for the purposes of this calculation. The figure thus obtained is 7·3 per cent., a low case mortality for the disease.

(f) *Association of Cases.*—Association of definite cases was traced in only two instances.

Example 1.—Two infants, one aged 2 years and the other 10 months, living in the same tenement building, resided in houses which opened off a common close. They were brought into daily contact with one another in the close and the backcourt. The one sickened on 28th July, and the other on 1st August—an interval of four days.

Example 2.—A group of six cases occurred in connection with the infant and junior sections of a day school, which serves a good working-class and middle-class population. The school is attended by 620 pupils, who are divided into 12 classes assigned as follows:—Ages 5-7 years, infant section with 4 classes; ages 7-9 years, junior section with 3 classes; ages 9-13 years, senior section with 5 classes. The cases were distributed over five classes, three infant and two junior being affected.

The infant classes associate at play-time, and classroom infant IV is entered directly off classroom infant III.

The interval between the dates of sickening of the first case (class infant III) and the second case (class infant IV) was four days; between the latter and the third case, which was also in class infant IV, there was an interval of three days.

The exact date of sickening of the fourth case, a brother of the second case, is difficult to determine. On 14th September, the day before his sister sickened, he had a sore throat, which necessitated his absence from school; but he apparently recovered, and, owing to inadvertance, was allowed to attend school for one day on the 26th September. It was not until 1st October that he became acutely ill with fever and severe occipital headache, which was the precursor of paralysis of the right leg on 3rd October. It is impossible to determine whether the infection was contracted from the same source as his sister or during his last visit to school. On the latter hypothesis the incubation period would be six days. On 24th September infant classes III and IV were disbanded. Infection, however, lingered on in the school. A fifth case, belonging to one of the other two infant classes, sickened on 2nd October, and on 12th October a sixth case occurred, and this was in the junior section. In spite of close observation of pupils, staff, and absentees, no other cases showing any involvement of the central nervous system or meninges were discovered, and the incidence of ordinary sickness was actually lower than usual for this period of the year.

The administrative problems resulting from this situation are dealt with later.

(g) *Infection in Relation to Schools.*—Twenty-two of the cases were among scholars. Six of these attended the school referred to, but in no other instance was there more than one case in any school.

(h) *Abortive Cases.*—The number of home contacts totalled 279 persons over 10 years of age and 153 of ages under 10. It was surprising how seldom, in spite of the closest inquiry, that evidence was obtainable of the existence of possible " abortive " cases among known contacts. In the school outbreak described, where the occurrence of such cases might have been expected, the pupils and absentees were kept under scrutiny from 20th September, the date on which the first information was received. The infant scholars who were disbanded—180 in number—also were kept under observation for three weeks. From 20th September till 20th October eight instances of sore throat, eight cases of cold in the head, and four of gastric affections were noted. None of these, on examination, showed any untoward symptoms. During this period common colds were general throughout the city. In rural districts where infections are less confused in their incidence, it is understandable that during an outbreak of poliomyelitis such illnesses could, with reason, be labelled " abortive " cases. As far as a great city is concerned, such a diagnosis cannot often be made with any degree of assurance.

The following three instances of familial infection seem worth recording under this heading :—

Example (1).—A definite case, a youth of 17 years, sickened on the 18th of August with shivering and headache and high fever. Several days later he complained of generalised pains. The fever lasted till the 30th of August, after which the patient apparently recovered. On the 6th of September he complained of numbness in his left arm and right leg. On the following day the numbness had been replaced by acute pain, and on the 8th the left arm and the right leg were definitely paralysed. His two brothers, aged 11 and 14, sickened on the 25th and 26th August with vomiting, headache, and fever. They apparently recovered on the third day of their illness. The times between the date of sickening of the definite case and the two possible abortive cases is therefore seven and eight days. The family live in a four-apartment house in a good district of the City. Apart from the three boys, there live in the house the mother, a brother of 19, and a maidservant, all of whom remained well.

Example (2).—A definite case, a girl of 8 years, sickened on the 10th of September with fever, abdominal pains, and vomiting. There was no diarrhœa and no headache. On the 12th of September both legs were found to be paralysed. The family consisted of father, mother, and three other children, aged 14, 11, and 6. There was a history of recent illness among the patient's brothers and sisters. On 1st September her brother, aged 14, complained of pain in the stomach, vomiting, and was found to have a slight temperature. He recovered completely in two days. The sister, aged 11, took a similar illness on the 6th of September, and the brother, aged 6, on the 8th of September. The family live in a nine-apartment house, and there are two maidservants. It is impossible to say what relationship, if any, these minor affections bore to poliomyelitis.

Example (3).—Two young children, ages 2 and 3, who were cousins, played together on 10th November. On 14th November the child aged 2 became fevered and vomited several times. He was very restless all night, and on the 17th November he was noticed to be unstable in his walking. On the 22nd November he was admitted to Ruchill Hospital, but at that time nothing definite could be ascertained, and he appeared to walk fairly well and made an uninterrupted recovery. On the 17th November his cousin aged 3 sickened with feverishness and vomiting, and two days later weakness of both legs appeared, which developed into definite paralysis. If we accept the first case as being abortive, then the incubation period in the second and definite case is seven days.

(i) *Milk Supply.*—An analysis of the sources of milk supply did not reveal any instances in which milk could be regarded as a possible vehicle of infection.

(j) *Illness among Domestic Animals and Birds.*—In 16 of the affected households domestic animals or birds were kept. These included 10 cats, 3 dogs, 5 canaries, 2 parrots, and 1 lark. In only one instance was there a suggestion of illness—namely, a cat was said to have " vomited " about the time of sickening of one of the cases. The evidence under this heading is therefore negative.

B. SYMPTOMATOLOGY.

(a) *Early Symptoms of Infection.*—The symptoms during the pre-paralytic stage were varied and often indefinite. Feverishness was probably the only one common to the vast majority of cases. The following table dealing with 100 cases—the histories of which seemed reasonably accurate—indicates in broad outline the " types " of onset which prevailed in Glasgow in 1928 :—

Early Symptoms	No. of Cases
Indefinite febrile disturbance, ...	38
Indefinite febrile disturbance with vomiting, ...	18
Indefinite febrile disturbance with diarrhœa, ...	6
Catarrhal symptoms—Nasal	6
Catarrhal symptoms—Bronchitis, ...	7
Catarrhal symptoms—Sore throat, ...	7
Paralysis, apparently first symptom, ...	6
Pains in limbs, ...	6
Convulsions, ...	3
Severe headache, ...	3
	100

Fifty-six per cent. of the cases presented only vague feverishness and malaise, with or without vomiting. In 6 per cent. paralysis was apparently the first indication of illness.

The remaining cases showed local symptoms. According to Walshe[3], " such local symptoms as develop appear to vary from epidemic to epidemic, and tend to conform to one of three main types—a gastro-intestinal with vomiting and less frequently diarrhœa; a tonsillar with signs of faucial inflammation; and a coryzal with symptoms of upper respiratory manifestation." It does not seem quite fair to accept vomiting as evidence of a gastro-intestinal type, but the classification is a useful one as a basis of comparison between epidemics. During the outbreak all these types were found—the gastro-intestinal providing 24 per cent. of cases, the upper respiratory 13 per cent., and the sore throat 7 per cent.

(b) *Difficulties in Diagnosis.*—During the earlier part of the outbreak when the fact of the increased prevalence of poliomyelitis was not recognised, six definite cases—otherwise certified—were admitted to the isolation hospitals. One was notified as diphtheria, one as pneumonia, and four as cerebro-spinal fever. Three of these last were instances of the meningeal type of the disease and did not develop any noticeable paralysis; the diagnosis was confirmed by lumbar puncture, and the typical increase in lymphocytes was found in the spinal fluid. It was only after the circularisation of medical practitioners that cases began to be notified erroneously as poliomyelitis, as until then the disease was in nobody's mind. Of the 12 cases erroneously notified, two were later diagnosed as intestinal toxæmia and two as birth palsy. The remaining eight were made up by the following:—Concussion of brain, 1; hysteria, 1; acute rheumatic fever, 1; rheumatic growing pains and sore throat, 1; acute rickets, 1; cervical caries, 1; otitis media, 1; and no apparent disease, 1.

(c) *Paralysis.*—The day of illness at which paralysis appeared was not always easy to obtain; this was partly due to the time which elapsed between onset and intimation and partly to the fact that the children were usually put to bed and the paralysis was not noticed till they attempted to rise. A table constructed from the available data shows that in 79 per cent. of the cases paralysis appeared within seven days of onset:—

Day of illness on which paralysis was observed, ...	1	2	3	4	5	6	7	8	9	10	11	12	14 and over
No. of cases showing paralysis,	8	11	19	16	11	8	6	1	2	2	1	1	14
	79°/o												

(d) *Nature of Paralysis.*—The paralysis was predominantly spinal in type, and the inferior extremities were principally affected. The following table gives an idea of the combinations encountered during early convalesence in the 100 cases dealt with in sub-section (a):—

A. Spinal Types—

Lower Limbs.—Left only affected, 14; right only affected, 21; both affected, 21.

Upper Limbs.—Left only affected, 7; right only affected, 3; both affected, 2.

Lower and Upper Limbs combined.—Right leg and right arm, 2; right leg and left arm, 1; right leg and both arms, 0; left leg and right arm, 3; left leg and left arm, 1; left leg and both arms, 1; both legs and left arm, 6; both legs and right arm, 2.

B. Brain Stem Types—

Right facial paralysis, 1; left oculomotor, 1; left internal rectus, 1.

C. Combined Spinal and Brain Stem—

Left leg, left arm, and left internal rectus, 1; right leg and left internal rectus, 1.

D. Meningeal Cases without Paralysis, 3.

E. Deaths—

Polio-encephalitis, 3; spreading paralysis—(*a*) ascending from legs, 3; (*b*) spreading from left arm, 1; (*c*) spreading from right arm, 1.

The lower limbs only were involved in 57 per cent. of cases. The right lower limb only was affected more frequently than the left lower limb only—21 per cent. as against 14 per cent., but both lower limbs together were involved as frequently as the right lower limb only.

(e) *Deaths.*—In all cases which terminated fatally, death supervened within a few days from the onset. In four cases it occurred on the third day; in three cases on the fourth day; and in one case on the fifth day. A complete description of a case of acute poliomyelitis and the results of the *post-mortem* examination by the City Bacteriologist are here omitted.

C. ADMINISTRATION.

(a) *Delay in Notification.*—It is a general experience that a crudescence of poliomyelitis may be present in a community for several weeks, or even for months, before its unusual prevalence is officially discovered. The extent of delay in notification in Glasgow may be judged from the following:—

Month.	No. of Cases Sickening.	Average Delay in Days.
July, ...	16	37
August, ...	25	20
September, ...	28	17
October, ...	22	6

The majority of the cases which remained unnotified were, however, receiving medical attention, and it is disappointing to record such an absence of notification. Probably the main reason for this failure is to be found in the fact that poliomyelitis had not previously appeared as an outbreak in Glasgow, and a habit of notification in respect of this disease had never been formed. A circular letter, sent by the Medical Officer of Health to medical practitioners and hospitals, informing them of the existence of the outbreak and giving a short summary of its features produced an immediate response. Fresh cases were promptly notified, and many "missed" cases came to light for the first time. For example, prior to 25th September, the date of the circular, the number of cases known to have occurred from 1st July was 24; whereas in reality, as was found out later, the number which actually sickened between these two dates was 64, a difference of 40 cases.

(b) *Isolation, Hospitalisation, and Exclusion from School.*—The average period during which a patient was regarded as infective was taken to be three weeks from the date on which the temperature fell to normal. Accordingly, all patients in the acute stage and who were unable to be nursed at home were removed to one of the isolation hospitals. If the patient on official discovery was found to have sickened more than three weeks before, and if there was no evidence of active disease, the case, if otherwise suitable, attended as an out-patient at one of the general hospital clinics for orthopædic treatment. School contacts of cases were kept off school for three weeks from the date of sickening of the patient. The co-operation of the Royal Hospital for Sick Children was freely afforded in the treatment of cases dismissed from the fever hospitals, the orthopædic work being carried out under the supervision of Mr. R. J. MacLennan.

The 112 cases sickening during the year were distributed shortly after their notification as follows:—

	Cases.
Treatment at home by medical practitioners, ...	28
Corporation fever hospitals,...	40
General hospitals (indoor), ...	18
General hospitals (outdoor),...	26
	112

(c) *Closure of Infected Schools.*—The policy of school closure as a means of checking the spread of the ordinary infectious diseases has long been discarded in Glasgow, but its employment had to be reconsidered when on 20th September it was learned that three cases of poliomyelitis had occurred in two of the infant classes at the school already mentioned.

The action then decided upon was to disperse for a period of three weeks the scholars and teachers of these two classes only, as at that time there was no indication that other sections of the school were affected. This step was based on theoretical considerations. It had not been found practicable to recognise "abortive" cases, but the two classes presumably contained a reservoir of infection in the form of healthy "carriers." By dispersing the children to their homes it was hoped that the "many" in the classrooms would no longer be in the presence of a reservoir of concentrated virus. The "few" in the families of such as were carriers might continue to be exposed, but those were, in any case, already in contact. Another argument for dispersal was the youthful age of these classes. On 2nd October another case occurred in one of the two remaining infant classes, and these classes were also dispersed.

When two further cases were discovered to have occurred in the junior section of the school, dispersal of the affected classes was delayed until the effect of other measures was ascertained. These aimed at dilution of the infection in the class-rooms and less prolonged exposure of the pupils, and consisted of the adoption of longer and more frequent play intervals and improvement of natural ventilation. Further, all pens, pencils, and slates used in common were abolished. Owing to the construction of the school it was not find practicable to diminish the actual density of pupils in the classrooms. All disbanded pupils were visited regularly by the inspector and illnesses reported. No further cases occurred either among the pupils or among those excluded.

Owing to the small number of cases affected it is not possible to draw any conclusions as to the value of the methods adopted. It is of interest to note in this connection that 16 other schools each provided one case, and although special steps were not taken, no further cases occurred in any.

(d) *Convalescent Serum.*—A small supply of convalescent serum was obtained at the end of September, but no cases suitable for treatment were discovered, as the outbreak fell rapidly in the middle of October.

D. Aftermath of Crippling.

At the time of writing it is too early to give a final review of the impairment of function among the victims of the outbreak. At the end of January, 1929, an inquiry was made into the 86 cases of the spinal type, which are dealt with in the clinical section of the report. Four of these cases had removed from the City, and two had died of intercurrent affections. Of the remaining 80 cases, 10 were still in hospital, 41 were attending as out-patients, and 29 were at home under medical supervision. Thirty of the 80 cases were still wearing splints or plaster, and the remainder were receiving massage, ultra-violet ray treatment, or no treatment. Of the 80 cases, 35 (43 per cent.) could be considered as more or less completely recovered.

E. The Constitutional Setting of the Outbreak.

Outbreaks of poliomyelitis, encephalitis lethargica, and cerebrospinal fever are considered by writers such as Hamer and Crookshank[4] to belong to the sequence of prevalences forming the influenzal constitution. The theory of this super-epidemiology regards such prevalences as phases of the influenzal influence, and outbreaks of these diseases appear either as precursors or as "trailers" of epidemics of manifest influenza. Apart from the difficulty of either accepting or contradicting this philosophy, it is of interest to place this outbreak of poliomyelitis in its processional setting.

Glasgow experienced increased prevalences of influenza every second year from 1918 to 1926. The table which follows summarises the time and magnitude of the prevalences ;—

Year.	Prevalence.	Months	Highest Weekly Death-rate.	No. of verified Cases in Outbreak.
1918	Influenza, ...	Oct.-Nov.	41·0	—
1919	Influenza, ...	Feb.-Apr.	50·0	—
1920	Influenza, ...	Apr.-May	20·1	—
	Epidemic encephalitis,...	Apr.-May	—	28
1922	Influenza, ...	Jan.-Feb.	53·8	—
	Epidemic encephalitis,...	Mar.-Apl.	—	20
1923	Epidemic encephalitis,...	Feb.-Mar.	—	75
1924	Influenza, ...	Feb.-Apl.	27·9	—
	Epidemic encephalitis,...	May-July	—	391
1926	Influenza, ...	Mar.-Apl.	28·9	—
1928	Poliomyelitis, ...	July-Oct.	—	91
1929	Influenza, ...	Jan.-Feb.	50.3	—
	Cerebrospinal fever, ...	Jan.-Feb.	—	50+

It will be noted that outbreaks of influenza are more usual in the early months of the year. The expected prevalence in 1928 did not materialise. The first outbreak of poliomyelitis to be recorded in Glasgow took place in the late summer of that year, and was followed in January, 1929, by an outbreak of influenza almost as severe as that of 1922. Since 1924 there has been no further outbreak of encephalitis, and during the years under survey, cerebro-spinal fever, although occurring sporadically in the City, did not show any departure into outbreak until January, 1929, when cases began to increase rapidly.

SUMMARY.

(1) The first recorded outbreak of poliomyelitis in Glasgow occurred in 1928. During the four months, July to October, 91 cases occurred. The number of cases increased progressively until the end of the first week in October, after which a sudden drop took place. The age and sex distribution of cases was typical of the disease, and the infection had apparently no proclivity to attach itself to any one social class. The case mortality among paralysed cases was 7·3 per cent.—a low figure. In only two instances were groupings of infected cases observed. In three instances possible abortive cases were discovered in association with definite cases. In a large city it is difficult to diagnose such cases with any degree of certainty. The milk supply bore no relation to the spread of infection, and no evidence was obtained of concomitant disease among domestic pets in infected households.

(2) The early symptoms were mainly indefinite. In 56 per cent. of the cases there was found fever and malaise, with or without vomiting. The local symptoms included coryzal, bronchial, tonsillar, and gastro-intestinal. In 79 per cent. of the cases paralysis occurred within seven days of onset. The paralysis was mainly of the spinal type.

(3) There was a considerable delay in notification during the early part of the outbreak, but the circularisation of medical practitioners and hospitals produced an immediate response. In a day school six cases occurred, and the administrative problems resulting are discussed in detail. More than half of the cases in the acute stage

were treated in hospital. The Royal Hospital for Sick Children co-operated in the after-treatment of paralysed cases, the majority of which were dealt with at their orthopædic clinic.

(4) As regards crippling, four months after the subsidence of the outbreak 43 per cent. of the cases of the spinal type showed more or less complete recovery.

(5) The outbreak of poliomyelitis in 1928 proceded the influenzal outbreak of January, 1929, in which the weekly death-rate reached a peak of 52·4, and this outbreak in turn was associated with the first significant increase of cerebrospinal fever since the early years of the Great War.

REFERENCES.

[1] M.O.H.'s Report, Glasgow, 1924, p. 86.

[2] MacNalty, A. S. "Epidemic Diseases of the Central Nervous System," London, 1927, p. 129.

[3] Walshe, F. M. R. *Lancet*, 1927, vol 1, p. 326.

[4] Crookshank, F. G. "Influenza," London, 1922, pp. 58 and 122.

MEASLES.

Measles, which had become prevalent during the closing months of 1927, continued in epidemic volume throughout the early months of 1928, though of smaller magnitude than in 1925-1926. The combined case rates per million of the population in respect of the years 1927-1928 was 16,748 as compared with 20,557 for the years 1925-1926.

Of the total cases registered, 10,098, the number removed to hospital was 974, or 9·7 per cent. The hospitalisation of measles, however, depends to a considerable extent on (1) the number of beds available; (2) home accommodation; and (3) the condition of the patient. The disease was most prevalent in Partick district and to the north of the City, while certain wards in the east and south were also affected to a considerable degree. The mortality was equivalent to 328 per million of the population, compared with 272 in 1927, and 389 in 1926. Deaths are mostly confined to young children as has been demonstrated in previous reports, and in a very considerable proportion of these the fatality is due to lung complications, such as pneumonia, or enteritis, &c.

The highest mortality in the wards was 828 in Cowcaddens, followed by Calton with 700, and 656 in Partick East. The latter rate may be compared with 294 in Partick West, where the disease was only slightly less prevalent, if allowance be made for the smaller population in Partick West Ward.

German Measles.—This disease is of little importance, apart from the fact that cases of scarlet fever may be overlooked because of mistaken diagnosis. During 1928, 263 cases were recorded, which, although higher than the number for the preceding year, is considerably lower than the alternate years of 1926 and 1924, when the disease was more prevalent.

WHOOPING COUGH.

The incidence of whooping-cough was heavy during 1928, thus continuing a sustained prevalence over two consecutive years as was the case in 1924-5. As compared with measles, which flares up in epidemic form and subsides within about six months, the whooping-cough wave is longer with a downward fluctuation in the curve during the summer months. As in 1927 the infection was general throughout the municipal wards of the City, whereas in the case of measles each ward in its turn is affected usually over a period of from two to three months, and is thereafter free from the disease over a period of about two years or more.

In 1928, there were 8,123 cases of the disease, 831 of which were removed to hospital. The deaths numbered 381, representing a mortality rate of 332 per million of the population compared with 322 for the preceding year. The morbidity of the disease would thus appear to have been greater during 1928 than in 1927. The death-rate was greatest in Govan Ward, 749 per million, followed by 730 in Kingston, and 728 in Calton.

Cases and case rates and the seasonal distribution of the disease are contained in Appendix Tables XVII, XVIII, and XIX respectively.

CHICKENPOX.

The continued prevalence of mild smallpox throughout England indicates the importance from an administrative point of view of keeping close supervision of all cases of chickenpox, because of the possibility of the latter being mistaken for the more serious infection. It has become the practice of this Department to have all doubtful cases of chickenpox examined by the medical staff.

Compulsory notification of chickenpox under regulations issued by the Board of Health would have ceased at the end of 1928, but in view of the continued occurrence of cases of smallpox of mild type in various parts of the country and in England, the Board issued further regulations extending the period of notification until 31st May, 1930.

In 1928, the cases of chickenpox registered numbered 5,563 compared with 7,864 in 1927. The case rate was lower than that of any of the three preceding years. Its distribution was fairly general throughout the City, Hutchesontown and Gorbals being most heavily affected.

OTHER INFECTIOUS DISEASES.

A record of other infectious disease dealt with, together with the number of each treated in hospital, is given in Appendix Table XVII. Among these is included ophthalmia neonatorum, and the various forms of pneumonia which are dealt with in other sections of the report; there remain trachoma and certain other diseases which are here briefly referred to.

ANTHRAX.

No case of human anthrax occurred during the year. In connection with a case in Edinburgh, a visit was made to the premises of a Glasgow firm trading in rugs, &c., with Germany and Czecho-Slovakia. Specimens of material were submitted to bacteriological examination with negative result. Shaving brushes taken from consignments of foreign origin were examined on various occasions but in no instance was a positive result obtained.

The practice of binding orange boxes with goatskin thongs still continues, and, as has been mentioned in previous reports, these are frequently found to be infected with anthrax bacillus. During the year no less than 32 of 152 samples submitted to bacteriological examination gave positive results, *i.e.*, over 20 per cent. These findings were reported to the Board of Health.

Anthrax in Animals.—The veterinary surgeon reported that on 17th February a bullock, one of a consignment of 25 from Carlisle, had died from anthrax. On 29th May, a bullock which had been forwarded with 15 others from Perth to the Glasgow slaughterhouse died on arrival. The death was found to be due to anthrax. In both instances the usual precautions were taken.

DIARRHŒA AND ENTERITIS.

These diseases were at one time exceedingly prevalent and were the cause of a considerable proportion of the infant mortality rate. The more stringent provisions of recent milk legislation and the knowledge imparted to mothers attending clinics or visited by nurses, regarding the handling of milk, have probably been important factors in the reduction of the number of deaths from diarrhœa and enteritis. The following table shows that the number of deaths at age periods has remained fairly constant during the past four years. The number of deaths was slightly lower in 1928.

	Age in Years.			
	−1	−5	5+	Total.
1926 (Old City), ...	296	77	77	450
1927, ...	277	83	70	430
1928, ...	288	66	41	395

There was a relatively larger proportion among infants in the first year of life. The proportion of these occurring in the summer and autumn is usually higher, but the marked disparity in this respect in former years is not now so evident, as is shown in the following table:—

1928.—Diarrhœa and Enteritis.

Month of Death	Number of Deaths −1 Year	Mean Temp.	Month of Death	Number of Deaths −1 Year	Mean Temp.
Jan., ...	24	39·6	July, ...	21	56·3
Feb., ...	11	39·7	Aug., ...	31	58·0
March, ...	11	39·6	Sept., ...	43	52·6
April, ...	17	45·2	Oct., ...	44	47·0
May, ...	13	50·7	Nov., ...	28	43·8
June, ...	26	51·4	Dec., ...	19	37·8
				288	

Fly Nuisance.—Following the custom of previous years, the weekly removal of material from all dung pits throughout the City was commenced in the month of May, and continued till September. In all 18,180 sprayings of pits were carried out, the total cost incurred amounting to £441, or an average of 5·82d. per spray.

RABIES.

No case of rabies is known to have occurred, but a number of persons bitten by dogs were reported by the police for inquiry. These are shown in relation to the season of occurrence and the severity of the bite :—

	Slight	Serious
1st Quarter, ...	62	1
2nd ,, ...	97	2
3rd ,, ...	104	1
4th ,, ...	63	1
	326	5

$$\underbrace{326 \qquad 5}_{331}$$

1927, ... 355 1926, ... 367

In addition to the above, four persons bitten by horses, one by a cat, and one by a monkey were reported for inquiry.

TRACHOMA.

During the year the register of trachoma was thoroughly revised and a new one instituted. The number of cases of definite trachoma on the new register at the end of 1928 was 127; a further 35 cases were kept on the register as being "doubtful," and there were other 36 cases under observation. The number of new notifications received during 1928 was 30.

As Glasgow is the only area in the United Kingdom in which trachoma is a notifiable disease, the following figures are of interest :—

Birth-places.—The birth-places of the definite cases were as follows :—

Birth-place.	Sex.		Total.
	Male.	Female.	
Scotland, ...	41	53	94
England, ...	1	1	2
Ireland, ...	6	9	15
Palestine, ...	2	—	2
Russia, ...	4	6	10
Lithuania, ...	2	1	3
Egypt, ...	1	—	1
Total, ...	57	70	127

Age and Sex.—The sex and age *at onset* are shown in the following table :—

Sex,	-5	-10	-15	-20	-25	-30	-40	-50	-60	+60	Total
Male,	7	3	8	16	12	6	3	1	1	—	57
Female,	11	16	14	16	4	4	2	1	1	1	70
Total,	18	19	22	32	16	10	5	2	2	1	127

It will be seen that the age group 15-20 yielded the greatest number of new cases and that more females are affected than males.

Trachoma is endemic in Glasgow, but the numbers attacked in each year are so small that it is not possible to say whether there is any movement towards increase or decrease. The following table shows the definite cases arranged as regards the quinquennial periods in which the onset apparently occurred. The drop in the number of cases since 1925 is associated with the fact that delay in notification is usually considerable. In practice it is not acute but chronic trachoma, which is notified :—

Period of Onset.	No. of Cases Infected.
Prior to 1900	10
1901-1905	6
1906-1910	6
1911-1915	20
1916-1920	39
1921-1925	39
1926-1928	8

Social Distribution.—The disease shows a predilection for the poorer inhabitants of the City. For example, the percentage of the total population inhabitating houses of one, two, three, four, and over apartments is 17·0, 46·4, 20·5, and 16·1 respectively, whereas the percentage of total patients which these yielded was 21·2 per cent., 59 per cent., 15 per cent., and ·8 per cent., and the institutions, 4 per cent.

Source of Infection.—In a large community it does not seem possible to trace out the source of infection in the vast majority of cases. An effort was made to secure the examination of all home contacts of the 33 cases notified in 1928. The result of this examination yielded only one case of definite trachoma. Certain instances of follicular conjunctivitis were found, but none of these could be described as trachoma. The absence of a bacteriological test renders it impossible to diagnose a typical or abortive form of this infection.

In only five instances are multiple cases of household infection known :—(*a*) *Family S-n.*—Two cases occurred in this household—the first a boy became infected in 1910, at the age of 9 years; his brother, when he was aged 11, became infected in 1916—a difference of 6 years in time of onset. (*b*) *Family S-e.*—The first case in this family was in a boy of 4 years who was infected in 1917. Five years later, in 1922, his mother became infected and in 1923 his sister, then aged 8 years. (*c*) *Family M‘C.*—A youth of 17 years was infected in 1923, his father having become infected two years earlier.

(*d*) *Family S-h.*—A girl, aged 10, became infected in 1926. She was not notified till early in 1928 when her sister, aged 8, was discovered to be also suffering from trachoma, the first symptoms having occurred in 1927. (e) *Family C-1*—Two brothers sickened with trachoma, one in 1923 and the other in 1926. At the time of onset the first case was aged 11 and the second case 16.

The intervals between dates of onset of cases within the same household therefore varied from one to six years. This may be in part attributable to the insidious onset characterising sporadic trachoma. In this country the real date of onset cannot in practice be accurately determined.

Administration.—In addition to notification provision is made in Glasgow for the supervision and treatment of this disease, both at a special clinic and in hospital.

Trachoma Dispensary.—During the year 110 individuals attended the Trachoma Clinic. The total number of attendances for the year was 5,042; of these, 1,741 were consultations with the ophthalmic surgeon and 3,301 were for treatment by the nurse. Seven patients attending the Trachoma Dispensary were sent to the Actinotherapy Clinic in Baird Street with excellent results. The number of home visits paid by the special Trachoma Nurse was 674.

Hospital.—Twenty-seven cases of trachoma were admitted to the Special Ward in Ruchill Hospital during the months June to December. Nineteen of these were first cases and eight readmissions. The operations carried out were as follows:—Chalazia incised and curetted, 2; Expressions for trachoma, 11; Cautery for trachoma, 5; Upper lids scraped, 3; Epilations, 7.

Clinical.—Dr. A. Lewis M'Millan has supplied the following notes on the type of trachoma at present prevailing:—

> "Cases of trachoma have been in the main of the chronic type, with an occasional acute attack on the top of the chronic condition. Some cases recur in association with attacks of a Morax conjunctivitis and some with a Weeks' bacillus or other micro-organism. I have one family in which all the members are affected by the Weeks' bacillus apart from trachoma. In such cases I think it wiser to have the cases seen daily and douched out by the nurse in charge. Cases of folliculitis are kept well under observation for some time and at times the follicles are expressed, since I find this tends to cut short the disease."

MALARIA AND DYSENTERY.

There were 24 cases of malaria and 45 cases of dysentery registered during 1928, compared with 19 and 29 respectively for 1927.

Household Outbreaks of Dysentery.—Two household outbreaks of dysentery were reported, one of the bacillary and one of the amœbic variety.

Example I.—Four members out of a family of five developed dysentery associated with the presence of a flexner bacillus. The patients in order of sickening were a boy aged 8, 12th March; a girl aged 7, 16th March; the mother, 23rd March; and the father also on 23rd March. The only member of the family who escaped was a girl aged 15. All the cases showed blood and mucus in the stools, but there was some diversity in the initial symptoms. The boy had no headache, pain, or vomiting; the girl suffered from both headache and vomiting, but had no pain; the mother suffered from headache, vomiting, and acute colicky pain in the abdomen; and the father complained of abdominal colic and headache, but without vomiting. The source of infection was not traced, but the father gave a history of having contracted dysentery in Gallipoli and Palestine during 1916-17, since when he had had no recurrence of dysenteric symptoms. A flexner organism was isolated from the father's fæces on his fifth day of illness, and serum taken from the mother and the two children agglutinated this organism in a dilution greater than 1 :100.

Example II.—In this case a parent who suffered from amœbic dysentery during the War infected four members of his family several years after his demobilisation in 1919. The family has seven members, *i.e.*, parents and five children from 2 to 12 years. The mother first showed symptoms in 1923, following upon the birth of a child. This child commenced to have attacks when 1 year old, and a child, born in 1924, is stated to have suffered from diarrhœal attacks soon after birth. In August, 1928, the father, mother, and these two children, now aged 5 and 3 years, simultaneously suffered from acute attacks of dysentery, and the amœba histolytica was detected isolated in all the stools. Of the remaining three children, two, the eldest aged 12, and a boy aged 2, are stated not to have suffered from diarrhœal attacks; a girl, aged 8, however, is said to have an occasional attack of diarrhœa. The stools of these last were all negative for amœbae. At the end of the year it was reported that there had been no further recrudescence of dysentery among the members of the family since the month of August. Examination of the stools at that time yielded negative results.

INFECTIVE JAUNDICE.

The Scottish Board of Health considered it desirable that the notification of the disease should be continued, and issued the Public Health (Infective Jaundice) Amendment Regulations (Scotland), 1927, making it notifiable for a further period of five years from 31st December, 1928, *i.e.* till 31st December, 1932.

No case has occurred in Glasgow since 1926 when one was registered.

LOCAL MOSQUITOES.

Notes by Dr. W. C. Gunn on the life history of mosquitoes in the neighbourhood of the City have been given in the Annual Reports of the Department since 1923. The following is a continuation of his investigations, which, during the past two years, have been mainly confined to Bogton Marsh, in connection with which it was found necessary to take legal proceedings, as described in the Reports for 1926 and 1927, for the drainage of that district on the south-eastern boundary of the City.

In view of the approach of the season when hibernating mosquito larvæ will hatch out and give rise to the first flight of mosquitoes, a visit to Bogton Marsh was made on 20th March, 1929, to ascertain the state of the ditches.

The very severe weather conditions which have prevailed since the beginning of 1929 probably have had a very marked effect on animal life generally in ponds and ditches, which have been more or less frozen throughout during January and February. Then again during March to date very little rain has fallen so that altogether the conditions have been against successful hibernation of mosquito larvæ, and there has been no serious tax on the capacity of the ditches for drainage of the Marsh. The Marsh itself is free from water, there being no pools present in any part so that mosquito breeding will not take place here.

The Merrylee Burn B.C.D. is running freely. Ditch A.D. is silted up with vegetation and both subsidiary ditches joining A.D. and running approximately east and west are also silted up and contain stagnant water, which is covered in most parts with an oily scum originating from the soil of the banks and also containing considerable quantities of what looks like an oxide of iron. These contaminations no doubt also hinder mosquito development. Ditch A.D. was searched, but no larvæ were found. However, in the adjoining ditch to the west of A.D., and flowing west to east, a few larvæ of anopheles bifurcatus—10 in all—were got, several of which are nearing full growth. The survival and progressive development of these larvæ is of interest because of the recent severe weather conditions.

The resistance of the larvæ of anopheles bifurcatus to freezing was tested by me in the office by exposing a dish containing larvæ to the outside conditions prevailing in the recent frost. Ice formed throughout and the larvæ and some slugs present were killed. This would tend to demonstrate that under natural conditions larvæ which are intended to survive the winter can usually find safe retreats, probably in the spaces left between the lower surface of the ice and the bottom of the pond or ditch, and remain there until thawing occurs.

Although the number of larvæ taken on 20th instant was small, yet their presence is sufficient to justify the assumption that if the ditches are not cleared of vegetation and mud, sooner or later a recurrence of the mosquito nuisance in the vicinity of the Marsh will arise.

DIABETES—SUPPLY OF INSULIN.

Supplies of insulin are given to persons whose circumstances warrant such assistance and who are not already provided for under the National Insurance Scheme or the Poor Law.

There were 36 new applicants during the year; 27 of these were married women or widows, 2, while of insurable age, were outwith the National Insurance Scheme, 4 were under 16 years of age, and 3 were patients in Corporation hospitals.

Cases on Roll at 31st December, 1927, ...		46
,, applying for first time during 1928, ...	36	
,, who discontinued treatment prior to 31st December, 1927, but re-applied during 1928, ...	3	
	—	39
		—
		85
Cases who died during 1928, ...	3	
,, ,, discontinued supply during 1928, ...	18	
	—	21
		—
Leaving Cases on Roll at 31st December, 1928, ...		64

The 18 cases who discontinued the treatment were visited and inquiries made as to the reason. These may be summarised as follows :—

Removed beyond City Boundary, ...	1
Removed—no trace, ...	2
Became chargeable to Parish and referred there for supplies, ...	2
"Keeping well—not requiring treatment,"	4
Others, ...	5
Hospital Cases now dismissed, ...	4
	—
	18

The daily dosage of the cases on the roll at 31st December, 1928, is as follows :—

No. of Cases.	Daily Amount.
...	Under 5 Units.
9	5 to 14 ,,
11	15 ,, 24 ,,
15	25 ,, 34 ,,
9	35 ,, 44 ,,
8	45 ,, 54 ,,
3	55 Units and over.
2	Receiving double strength insulin.
7	Not stated.
—	
64	

During the year 5,039 phials of ordinary strength insulin (100 units per 5 c.cs.), and 216 phials of double strength (200 units per 5 c.cs.) were issued, the total cost being £547. The corresponding figures for 1927 were 4,615 phials at a cost of £471.

SECTION V.

RESPIRATORY DISEASES AND TUBERCULOSIS.

In last year's report both of these groups were very fully discussed with particular reference to the administrative problems to which their incidence is now giving rise. As regards non-pulmonary tuberculosis, the present position from a clinical and administrative point of view was fully dealt with as the result of a special investigation. A special inquiry into the effects of ultra-violet rays was also included. As no fresh aspects of the problem involved in the administration of these diseases has presented itself during the year, the following notes give the statistical data:—

	Pneumonia.		Influenza.		Other Respiratory Diseases	
Year.	Deaths.	Rate per million.	Deaths.	Rate per million.	Deaths.	Rate per million
1922	2,303	2,129	767	709	1,477	1,365
1923	1,400	1,285	65	60	972	892
1924	2,198	2,006	412	376	1,283	1,171
1925	1,665	1,517	210	191	1,098	1,000
1926	1,758	1,596	386	350	967	878
1927	1,792	1,585	204	180	881	779
1928	1,801	1,570	210	183	813	709

The total number of deaths from respiratory diseases during 1928 was 2,824, compared with 2,877 for the preceding year. The death-rates for these years were respectively 3,462 and 3,544. Most of the decrease was due to respiratory diseases other than pneumonia and influenza, of which the most important is bronchitis. There has been a continuous reduction in these other forms of respiratory disease since 1924, when the rate was 1,283, or over 50 per cent. in excess of the rate for 1928.

In 1924 the death-rate for both pneumonia and influenza was heavy, but since then the rates have remained fairly constant. In 1928 the pneumonia death-rate was 1,570, compared with 1,585 in 1927, while the corresponding comparison for influenza was 183 against 180.

Since acute primary pneumonia and acute influenzal pneumonia were made notifiable a very considerable part of the hospital accommodation has been required for the treatment of the more serious cases, where home conditions are so unsuitable that there is little chance of the patient receiving the care and attention, as well as the nourishment, necessary to ensure recovery. Apart from the unsuitable housing conditions, which undoubtedly influence the development of lung affections, there is very definite association of the incidence of these diseases with climatic conditions as is evidenced each year by the increase in the number of cases during the late autumn and winter. At that season of the year the hospital beds are required for the seasonal increase in scarlet fever and diphtheria, while an epidemic of measles or whooping-cough may already be well developed. The hospital accommodation at that time of the year is usually quite inadequate to meet the demand for the removal of cases of pneumonia. The following table shows the percentage of cases removed to hospital :—

Year.	Cases Notified	Percentage to Hospital.
1920	4,533	38
1921	3,592	46
1922	6,572	43
1923	4,465	60
1924	7,272	54
1925	6,105	59
1926	6,704	55
1927	6,252	58
1928	6,072	66

PULMONARY TUBERCULOSIS.

The deaths from pulmonary tuberculosis during the year numbered 954, which is equivalent to a rate of 832 per million of the population compared with 838 for the preceding year and 861 in 1926. The reduction is small but nevertheless satisfactory, as during the early part of the year the continued cold and wet weather adversely affected the disease and the weekly numbers of deaths for a time were higher than the corresponding numbers in the preceding year.

The death-rates from pulmonary tuberculosis, in succeeding periods, have been as follows :—

1881-1890,	2·680	per 1,000 living.	1923, -	1·014	per 1,000 living
1891-1900,	2·015	,,	1924, -	1·006	,,
1901-1910,	1·533	,,	1925, -	·922	,,
1911-1915,	1·346	,,	1926, -	·861	,,
1916-1920,	1·191	,,	1927, -	·838	,,
1921, -	1·007	,,	1928, -	·832	,,
1922, -	1·074	,,			

The death-rates for several large towns are shown in the table which follows :—

PHTHISIS DEATH-RATE PER 100,000 IN CERTAIN TOWNS.

	1913	1920	1921	1922	1923	1924	1925	1926	1927	1928
Glasgow,	**143**	**106**	**101**	**107**	**101**	**101**	**92**	**86**	**84**	**83**
Edinburgh,	114	85	91	87	94	101	95	84	90	81
Dundee,	116	99	100	98	98	85	87	81	89	80
Aberdeen,	109	93	91	88	81	91	97	75	66	71
London,	—	106	107	108	97	98	95	88	91	88
Liverpool,	—	141	127	140	125	130	130	122	110	118
Manchester,	—	133	130	127	124	118	131	119	115	110
Birmingham,	—	95	97	97	92	97	98	94	89	86

Of the total deaths 55 per cent. were males and 45 per cent. females. The female deaths exceed the males only at ages between 5 and 20. The highest ward death-rate was 1,540 in Calton, followed by 1,340 in Exchange and 1,274 in Gorbals. The lowest rate, 264 in Langside was followed by 301 in Pollokshaws and 381 in Govanhill.

The following statistics deal with cases on the register on the lines of former years:—

Summary of cases as at 31st December, 1928:—

Total cases registered from 1st January, 1910, to 31st December, 1928, ...		42,128
Less—Died, ...	22,869	
(1) Verified on notification, but subsequently—		
Removed and not traced, ...	3,360	
Removed from Glasgow, ...	2,790	
(2) Not discovered on notification—		
Not found at address given, ...	1,061	
Notified from Poor Law Institution (with no fixed abode), but still remaining on Register, ...	959	
(3) Subsequently taken off registers as not suffering from pulmonary tuberculosis,	5,909	
		36,948
Total cases under observation at 31st December, 1928,		5,180

The number of cases registered since 1913 is summarised below:—

Year	Cases Registered	Year	Cases Registered
1913-1915 (annual average),	2,425	1924, ...	1,829
1916-1920 ,,	2,410	1925, ...	1,600
1921, ...	2,045	1926 (Old City),	1,732
1922, ...	1,954	1926 (Added Area),	63
1923, ...	1,725	1927, ...	1,623
		1928, ...	1,724

Cases Registered during 1928:—Of the total number of cases registered during the year, 1,532 were notified in terms of the Infectious Diseases (Notification) Act, 1889, and Tuberculosis Regulations, 1912. 16 were sent by the Pensions and Military Authorities, while 176 were ascertained from other sources, as shown below:—

I. *Source of Notified Cases*:—

1. Occurring in private practice, ...			984
2. Occurring in public practice:—			
(*a*) Poor Law cases at home addresses, ...	19		
Poor Law cases from hospitals and poorhouses, ...	188		
Poor Law cases at dispensaries, ...	1		
		208	
(*b*) Charitable dispensaries and infirmaries,	191		
Corporation dispensaries, ...	149		
		340	
			548
Total cases notified, ...			1,532

2. *Source of information in cases not notified :—*

(*a*) From admission and dismissal sheets of Poor Law Institutions, ...	14	
(*b*) School Medical Officers, ...	19	
(*c*) Port Local Authority, ...	4	
(*d*) County Medical Officer, ...	22	
(*e*) From death cards only, ...	117	
		176
3. *From Military Authorities,*		16
Total cases registered, ...		1,724

Places of Residence at Time of Registration.—When a patient is notified from a home address this is visited, and if the case can be definitely located the patient is regarded as a "home" case, even although at the time of notification he is under treatment in an institution. The results of these inquiries may be summarised as follows :—

Cases traced to home addresses, ...	1,614
Cases at home, but not visited at request of medical practitioner, ...	40
Cases where only known address was an institution, ...	70
Cases not found at address given, ...	—
	1,724

Private and Public Notifications.—The figures given in the foregoing summary refer to the total number of cases registered during the year, while the following table refers only to notifications under the Act received regarding the 1,532 cases so notified :—

Notifications	Private	Public	Total	Percentage Public
Primary, ...	984	548	1,532	35·7
Multiple, ...	158	108	266	40·6
	1,142	656	1,798	—
Percentage multiple to primary notifications in each group, ...	16·0	19·7	17·3	

Age Distribution of Cases Registered.—This information is given in the following table for each of the three years ending 1928 :—

Age	1926		1927		1928	
	M.	F.	M.	F.	M.	F.
– 5 years,	28	47	38	28	48	33
– 10 ,,	52	37	31	47	52	39
– 15 ,,	41	56	37	49	34	57
– 20 ,,	90	108	86	128	99	120
– 25 ,,	114	141	128	109	132	140
– 35 ,,	201	196	190	167	197	180
– 45 ,,	168	123	149	119	152	123
– 55 ,,	166	73	126	60	113	67
– 65 ,,	88	38	71	31	61	44
Over 65 years,	17	11	14	15	22	11
Total,	965	830	870	753	910	814
Grand Total,	1,795		1,623		1,724	

Housing Accommodation of Patients.—The following table gives the house accommodation at the date of registration of such patients as had home addresses. Patients who were in institutions (mostly Poor Law) at the time of notification are included along with those who could not be traced at the addresses given :—

	1926		1927		1928	
	M.	F.	M.	F.	M.	F.
1 Apartment, ...	135	142	143	136	126	146
2 ,, ...	464	446	412	393	440	393
3 ,, ...	162	137	160	121	164	149
4 ,, and up, ...	86	84	81	74	109	100
In Institutions and not traced, ...	118	21	74	29	71	26
Total, ...	965	830	870	753	910	814
Grand Total, ...	1,795		1,623		1,724	

Institutional Treatment.—The following table shows admissions to institutions of patients suffering from pulmonary and non-pulmonary tuberculosis since 1922 :—

Year	Local Authority Hospitals	Sanatoria	Poor Law Institutions	Total
1922, ...	2,018	714	604	3,336
1923, ...	1,959	690	555	3,204
1924, ...	1,840	499	573	2,912
1925, ...	1,531	457	606	2,594
1926, ...	1,637	425	738	2,800
1927, ...	1,458	413	615	2,486
1928, ...	1,429	418	819	2,666

Dispensary Attendances.—The following table shows the attendances and consultations at the various tuberculosis dispensaries in each year, 1926 to 1928. All forms of tuberculosis are included :—

Dispensary	Number of Consultations	Primary Attendances		Subsequent Attendances	
		Males	Females	Males	Females
Year 1926, ...	1,244	2,486		49,436	
„ 1927. ...	1,236	2,441		51,406	
Granville Street,	142	249	198	4,047	2,418
Black Street,	247	240	211	4,299	4.137
Adelphi Street.	192	214	218	3,813	2,804
Acorn Street,	276	275	271	10,220	7,311
Central Area,	156	260	269	2,371	2,006
Govan, ...	316	199	160	4,152	3,463
Year, 1928,	1,329	1,437	1,327	28,902	22,139
Total, ...	...	2,764		51,041	
Grand Total, ...	...	53,805			

Home Visitation by Nurses.—The number of home visits by nurses during the past three years has been as follows :—

1926	1927	1928
49,605	48,820	46,182

Issue of Medical Extras, Beds and Bedding, &c., to Patients under Treatment at Home.—In 1916 the Local Authority was granted power to provide assistance in the domiciliary treatment of patients in the form of extra nourishment and bed and bedding in necessitous cases. In 1928 these grants were made in 19 cases (medical extras) and 28 cases (bed and bedding). Issues of this nature are only granted after full inquiry, and in cases where the home circumstances are reasonably satisfactory. They are not regarded in any sense as a measure of out-relief, which is always readily granted by the Poor Law Authorities when required.

Issue of Clothing to Patients.—The interest on the purchase price of Bellefield Sanatorium, amounting to about £400 per annum, has continued to be applied to the purpose of providing clothing for necessitous patients proceeding to sanatoria. During the year 1928 200 patients were assisted in this way, compared with 194 during 1927. The total number assisted since the inauguration of the scheme in 1916 is 2,414.

NON-PULMONARY TUBERCULOSIS.

Tuberculosis in all its forms became compulsorily notifiable on 1st July, 1914. The subjoined table gives the number of cases of non-pulmonary tuberculosis registered during subsequent years :—

Year	Cases Registered	Year	Cases Registered
1914-15 (annual average),	1,303	1924, ...	1.221
1916-20 ,,	1,360	1925, ...	1,115
1921, ...	1,141	1926, ...	1,031
1922, ...	1,050	1927, ...	1,101
1923, ...	1,234	1928, ...	1,107

The following table show (1) the distribution of the cases registered in each year in accordance with the location of the disease and sex of the patients; and (2) distribution according to certain age-periods in each year :—

TABLE I.

Showing Non-Pulmonary Tuberculosis Cases Registered During 1914–1928, with Location of Disease and Sex.

Year		Glands		Bones and Joints		Abdomen		Meninges		Multiple		Others		Total	
		Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1914,*	...	159	153	239	186	79	45	73	47	11	18	70	62	631	511
1915,	...	176	232	192	156	135	104	137	123	52	27	71	59	763	701
1916,	...	199	216	185	138	155	136	136	140	40	18	75	64	790	712
1917,	...	203	266	196	170	155	113	93	95	41	34	70	57	758	735
1918,	...	186	265	158	143	119	128	92	107	34	30	78	72	667	745
1919,	...	138	178	164	127	126	123	93	86	40	29	56	47	617	590
1920,	...	138	145	193	168	116	112	89	83	39	29	44	29	619	566
1921,	...	149	171	165	127	116	84	78	74	27	29	68	53	603	538
1922,	...	134	147	141	124	130	111	75	66	20	24	42	36	542	508
1923,	...	145	155	181	129	145	118	102	75	16	15	78	75	667	567
1924,	...	149	150	145	130	140	144	104	81	35	36	65	42	638	583
1925,	...	145	137	150	139	131	114	75	65	29	24	54	52	584	531
1926,	...	135	137	142	131	115	109	78	57	24	35	35	33	529	502
1927,	...	131	148	186	134	127	106	89	61	22	17	45	35	600	501
1928,	...	132	152	150	138	113	99	84	86	20	10	61	62	560	547

* Figures for six months ending 31st December, 1914.

TABLE II.

AGE DISTRIBUTION OF NON-PULMONARY TUBERCULOSIS CASES REGISTERED DURING EACH YEAR, SINCE COMMENCEMENT OF NOTIFICATION ON 1ST JULY, 1914.

Year	Under 1 year		1·5 years		5-10 years		10-15 years		Over 15 years		TOTAL	
	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females	Males	Females
1914, ...	60	21	132	90	140	102	134	115	165	183	631	511
1915, ...	59	49	236	161	164	140	112	108	192	243	763	701
1916, ...	64	45	244	152	149	123	108	164	225	228	790	712
1917, ...	52	48	190	134	157	156	117	149	242	248	758	735
1918, ...	30	33	163	169	137	125	129	142	208	276	667	745
1919, ...	45	28	151	109	142	123	78	136	201	194	617	590
1920, ...	57	35	143	122	128	137	110	94	181	178	619	566
1921, ...	51	35	157	111	133	122	81	94	181	176	603	538
1922, ...	38	28	175	150	103	87	71	79	155	164	542	508
1923, ...	59	19	214	165	116	112	86	79	192	192	667	567
1924, ...	50	39	212	171	96	99	103	85	177	189	638	583
1925, ...	48	22	184	144	111	103	71	77	170	185	584	531
1926, ...	28	22	162	127	109	88	63	78	167	187	529	502
1927, ...	31	28	171	102	130	82	73	77	195	212	600	501
1928, ...	29	17	152	104	115	112	83	60	180	255	559	548

The death-rates from both tubercular meningitis and abdominal tuberculosis are lower than the respective rates of the preceding year, but the rate from other forms of the disease is slightly higher. The total rate for all non-pulmonary forms of the disease (301) is the same as that of 1927.

The deaths among females from tubercular meningitis are slightly in excess of the number among males, but for abdominal tuberculosis there is rather marked disparity—24 deaths among males as compared with 10 among females, the latter being more subject to the disease at ages over 20 years.

GLASGOW.—DEATH-RATE PER MILLION OF THE POPULATION.

Year	Tuberculous Meningitis	Abdominal Tuberculosis	Other Forms	Total
1901-5, ...	319	301	258	878
1906-10, ...	416	278	255	949
1911-15, ...	285	197	183	665
1916-20, ...	210	167	170	547
1921-25, ...	163	103	122	388
1926, ...	140	67	104	311
1927, ...	142	60	99	301
1928, ...	140	56	105	301

ACTINOTHERAPY TREATMENT.

Baird Street Clinic.—The clinic was carried on during the year as in 1927, and there were no additions to the apparatus or personnel. The total number of cases dismissed or ceasing treatment was 325, leaving 232 under treatment at the end of the year. A most unfortunate feature is the lack of perseverance on the part of many of the patients. They want immediate results and are bored with a treatment which requires several months' attendance. On the other hand there are some whose other duties prevent them coming as regularly as they themselves would like or precludes them bringing their children. It is for this last group that the indoor accommodation is invaluable. Without it many would still have discharging sinuses and open sores.

Below is tabulated the result of the year's work, but the table only indicates the general results and not the actual changes produced. The types of cases dealt with are mainly minor surgical tuberculosis, skin tuberculosis, and a few cases of rickets, bronchitis, rheumatism, sequelæ of encephalitis lethargica and general debility.

Actinotherapy has been regarded as a cure-all by some who endeavour to exploit it to their own advantage, but its specific usefulness certainly lies in the treatment of tuberculosis, and even here one must have perseverance and expect numerous disappointments. Typical of the most satisfactory results are the following :—

(1) Dactylitis of the left index finger in a boy of 2½ years, of two months' duration with extensive necrosis of the bone and tumefaction of the tissue and the x-ray appearance of active disease of the proximal phalanx of the affected

finger. After 14 months' treatment with general carbon arc light and local with the quartz mercury vapour lamp—during which period the patient was brought regularly to the clinic—the finger had regained almost normal proportions, and the Radiologist reported complete absence of bone lesion.

(2) A girl of 17 years, who suffered from cervical adenitis for five years and had had to have a softening gland incised four months before coming to the clinic. When first seen there was a keloid scar one inch long with a discharging sinus, and underlying adenitis. It required two months' local treatment with the quartz mercury vapour lamp, along with general exposure from the carbon arcs, to dissipate the scar and clear up the discharge. Six months later the scar was almost invisible and there was no palpable adenitis.

(3) Extensive lupus of the face in a female adult of 18 years' duration. Although the skin was not ulcerated there was deep infiltration with a little destruction of the external nares. This patient came under treatment in 1925; after a year's treatment with both types of radiation the external appearance was very much improved, but there was still some active intranasal disease. In 1927, the face had regained its normal appearance, but there was still a little crusting of the left nostril. In the early part of 1928 the disease appeared wholly quiescent, but towards the end of the year one or two spots again wakened up.

The above three examples illustrate the best and the worst features of ultra violet radiation. The tendency to relapse is inevitable, particularly so in cases of lupus, and such patients must return again and again to have small nodules treated. The majority who have benefitted by the treatment understand this and return on first sign of recrudescence. In this way it is very rare for the recurrent disease to become extensive, and many times it is sufficient to touch the nodules with acid nitrate of mercury.

RESULTS OF LIGHT TREATMENT AT BAIRD STREET CLINIC.

	INDOOR.			OUTDOOR.		
	Healed.	Not Improved.	Total.	Healed.	Not Improved.	Total.
Cervical Glands,	10	2	12	65	41	106
Lupus,	3	—	3	29	19	48
Abdominal,	7	4	11	10	13	23
Dactylitis,	3	—	3	5	6	11
P.P. and Laryngitis,	—	—	—	—	4	4
Miscellaneous,	12	8	20	34	32	66
	35	14	49	143	115	258

The total number of cases shown is 307, the other 18 having stopped very early in the treatment and no assessment is possible.

In the above table "healed" means the clinical absence of the disease for which they were under treatment, that is, in cervical glands the absence of discharge and palpable swelling; in abdominal cases the lack of tumidity and the freedom from symptoms; and in dactylitis the lessening of the tumefaction and the absence of active disease radiologically. In all types one has endeavoured to make as stringent an assessment as humanly possible.

Roughly the length of time under treatment for discharging cervical glands is six months, varying, of course, with the extent of the disease. With dactylitis it takes at least a year to obtain a satisfactory result, while with lupus one must expect the treatment to last for two or three years. In the miscellaneous group is included tuberculosis of the long bones, other than dactylitis, and occasional cases of non-tuberculous sinuses, rickets, &c. In this group are also included a few cases of sequelæ of encephalitis lethargica, but in none was there any real improvement. It is true that some felt a little better and in others there was less salivation and greater ability to walk, but it is probable that a similar result would have been obtained with any of the simple tonics.

At the end of the year there were still 232 patients under treatment, 49 attending the morning session, 77 the afternoon session, and 106 the evening session.

Ruchill Hospital.—The x-ray photography and treatment carried on at Ruchill Hospital by the Consulting Radiologist has been fully described in the Reports for the past two years. The following is a summary of the work done during 1928:—

X-Ray Photographs taken, ...		2,476
Of which—		
Hospital Cases, ...		812
Out-door Cases, ...		1,664
Treatment by X-Ray—		
Number of Out-door Patients treated for Glands.		60
Number of Out-door Patient Attendances,		875
Treatment by Mercury Vapour Lamp—		
Number of Out-Patients treated—		
Glands, ...	4	8
Lupus, ...	4	
Number of Out-door Patient attendances,		297
Number of Ward Patients suffering from Pneumonia, ...		50
Number of Ward Patient Attendances,...		1,246

Govan Clinic.—The installation at Govan Office Dispensary was described on page 57 of the report for last year. Treatment of cases of tuberculosis was begun towards the close of 1927. The following figures refer to the numbers treated during 1928, the clinic being closed for twelve weeks during the school holidays from the beginning of July to near the end of September.

Altogether there were 116 sessions at which 2,194 attendances were made—804 being males and 1,390 females. The following shows the conditions treated and the results:—

	Cases.	Improved.	Not Improved.
*Glands, ...	53	44	9
Lupus, ...	7	5	2
Joint Disease, ...	10	4	6
Abdomen, ...	7	—	7
Bone Disease (Dactylitis, Spine, &c.), ...	10	2	8
Others, ...	2	1	1
Total, ...	89	56	33

* One child with glands of neck came specially from Middlesborough to have treatment here, with excellent result.

Much of the benefit which acrues from this therapy is enhanced by regular attendance for dressings of sinuses and aspirations. No facilities for spray baths are available, which in addition to the personal hygienic value would add to the treatment effect. No ill-effects were noted and no eye complaints. Slight desquamation of skin was occasionally noticed.

SECTION VI.

VENEREAL DISEASES.

The treatment centre at 67 Black Street, which was opened in October, 1927, has now been working for a complete year. The attendances show that the centre is fulfilling its purpose, and the facilities provided for the treatment and diagnosis of venereal disease are being fully taken advantage of.

There are now two "*ad hoc*" centres entirely devoted to the treatment of male patients—Black Street and Broomielaw. The Bellahouston and Western Infirmary Centres are established in the out-patient departments of two of the general hospitals, and deal with females as well as males. In the Victoria Infirmary a small number of cases are dealt with, both male and female, principally late syphilitic affections. In the Sick Children's Hospital and the Eye Infirmary there are also clinics which deal with venereal disease. The Lock Hospital deals entirely with female cases and children.

In June a special clinic was established in the out-patient department of the Royal Glasgow Maternity and Women's Hospital for the treatment of venereal disease in association with pregnancy. It is rather soon to make any definite statement regarding the success or otherwise of this particular clinic, but it would appear that there is a certain amount of "defaulting" before treatment is complete. More than half of the cases seen were found not to be suffering from venereal disease, so that the use which is made of the centre for the purposes of diagnosis is obvious.

There are at present nine weekly sessions for males at Black Street, five at Broomielaw, four at Bellahouston, two at the Western Infirmary, and two at the Victoria Infirmary, making a total of twenty-two medical sessions per week in the City. Of female medical sessions there are three at Baird Street, two at Bellahouston, one at the Victoria Infirmary, two at the Western Infirmary, thirteen at the Lock Hospital, and one at the Maternity Hospital, making a total of twenty-two. At the Eye Infirmary there are three clinics at which both males and females are dealt with. In addition, treatment is offered to pregnant women at certain of the child welfare centres.

Towards the end of the year many of these male sessions, especially those held in the evenings, were overcrowded, and, in order to enable the work to be overtaken, the medical staff at all these evening clinics was duplicated; but, even so, extra sessions will have to be opened shortly. The Bellahouston Clinic

PATIENTS TREATED AT THE SEVERAL

	Belvidere Hospital	Broomielaw Dispensary	Black Street	Baird Street		Bellahouston Dispensary	
	M.	M.	M.	M.	F.	M.	F.
IN-PATIENTS—							
New cases suffering from—							
Syphilis, ...	36	—	—	6	2	—	2
Gonorrhœa, ...	67	—	—	—	3	—	3
Soft Chancre, ...	7	—	—	—	—	—	—
Syphilis and Soft Chancre,	4	—	—	—	—	—	—
Syphilis and Gonorrhœa, ...	4	—	—	—	1	—	2
Gonorrhœa and Soft Chancre,	2	—	—	—	—	—	—
Balanitis, ...	1	—	—	—	—	—	—
Venereal Warts, ...	1	—	—	—	—	—	—
Stricture, ...	2	—	—	—	—	—	—
Conditions other than Venereal,	4	—	—	—	1	—	—
Total, ...	128	—	—	6	7	—	7
				13			
Total In-Patients admitted,	230	—	—	8	15	—	7
				23			
Aggregate Days' Residence,	7,638	—	—	254	1,450	—	290
				1,704			
Average Days' Residence,	33·2	—	—	74			41·4
OUT-PATIENTS—							
New cases suffering from—							
Syphilis, ...	—	147	273	5	52	120	61
Gonorrhœa, ...	—	588	993	—	78	415	30
Soft Chancre, ...	—	18	31	—	—	18	—
Syphilis and Soft Chancre, ..	—	—	2	—	—	1	—
Syphilis and Gonorrhœa, ...	—	11	18	—	8	13	12
Gonorrhœa and Soft Chancre,	—	1	4	—	—	2	—
Balanitis, ...	—	44	162	—	—	42	—
Venereal Warts, ...	—	5	13	—	—	3	—
Stricture, ...	—	9	12	—	—	1	—
Conditions other than Venereal,	—	158	374	23	50	95	90
Total, ...	—	981	1,882	28	188	710	193
				216		903	
Aggregate Attendances,	—	38,314	56,624	209	5,149	27,012	8,297
				5,358		35,309	
PATHOLOGICAL EXAMINATIONS—							
Wassermann Reactions, ...	155	562	970	471		903	
Spirochætes, ...	1	143	471	—		80	
Gonococci, ...	128	983	1,895	399		1,598	
Totals, ...	284	1,688	3,336	870		2,581	

CENTRES DURING THE YEAR 1928.

Victoria Infirmary		Western Infirmary		Sick Children's Hospital		Eye Infirmary		Lock Hospital	Mater. Hospital (7 months)		Total
M.	F.	M.	F.	M.	F.	M.	F.	F.	F.		
11	5	10	3	3	6	10	6	101	—	=	201
1	—	—	—	—	—	—	—	178	—	=	252
—	—	—	—	—	—	—	—	—	—	=	7
—	—	—	—	—	—	—	—	—	—	=	4
—	—	—	—	—	—	—	—	94	—	=	101
—	—	—	—	—	—	—	—	—	—	=	2
—	—	—	—	—	—	—	—	—	—	=	1
—	—	—	—	—	—	—	—	—	—	=	1
—	—	—	—	—	—	—	—	—	—	=	2
—	—	—	—	—	—	—	—	1	—	=	6
12	5	10	3	3	6	10	6	374	—	=	577
17		13		9		16					
12	5	10	3	4	7	16	13	471	—	=	801
17		13		11		29					
257	109	658	501	54	300	617	699	22,415	—	=	35,242
366		1,159		354		1,316					
21·5		89·1		32·1		45·3		47·5	—	=	43·9
18	11	141	102	26	38	89	76	146	15	=	1,320
—	—	51	64	—	—	—	—	231	14	=	2,464
—	—	3	—	—	—	—	—	—	—	=	70
—	—	1	—	—	—	—	—	1	—	=	5
—	—	4	4	—	—	—	—	106	1	=	177
—	—	—	—	—	—	—	—	—	—	=	7
—	—	2	—	—	—	—	—	—	—	=	250
—	—	—	—	—	—	—	—	—	—	=	21
—	—	—	—	—	—	—	—	—	—	=	22
3	3	31	25	53	49	—	—	10	43	=	1,007
21	14	233	195	79	87	89	76	494	73	=	5,343
35		428		166		165					
414	354	5,620	6,717	733	1,693	3,622	3,025	18,036	821	=	176,640
768		12,337		2,426		6,647					
80		1,460		725		1,586		1,373	93	=	8,378
—		21		—		—		45	—	=	761
3		336		—		—		8,409	72	=	13,823
83		1,817		725		1,586		9,827	165	=	22,962

is working under a severe handicap from lack of sufficient space, and proposals have been adopted whereby the female section of the clinic will be transferred to new premises at Govan Town Hall, and the rooms formerly occupied by the female clinic will be made available for extending the facilities for the treatment of males.

During the year, one of the clinical officers was appointed to be senior clinician, with definite powers to organise the clinical work on the best possible lines, and to secure correlation in the work done at the different centres.

All the male clinics are open from Monday to Friday from 9 a.m., to 7.30 p.m., and on certain hours on Saturday and Sunday for intermediate treatment. Intermediate treatment is also given to female cases at their respective centres. Prophylactic treatment is not advertised, and, consequently, is only taken advantage of by relatively few individuals, and no centre is kept open at night for this purpose.

Propaganda has been continued as before under the auspices of the Glasgow Burgh Health Insurance Committee, the Glasgow Branch of the Scottish Committee of the British Social Hygiene Council, and the Glasgow Corporation. Lectures and cinematographic films were exhibited in various parts of the City. It is still adopted as a guiding principle in this propaganda that the frank education of the public in all matters of venereal disease will form one of the strongest weapons for combating it.

The issue of Salvarsan substitutes to private medical practitioners still continues, and last year there were issued to 45 doctors 1,679 doses of these drugs. During 1927, 1,156 doses were issued to 42 doctors.

The year's work at the various centres has been characterised by three principal features—first, an increase in the total number of new cases of venereal disease treated; secondly, a considerable increase in the aggregate attendances; and thirdly, a very large increase in the numbers of persons presenting themselves at the clinic not suffering from venereal disease. In 1928, 4,907 new cases of venereal disease presented themselves at clinics other than ante-natal clinics compared with 4,673 in 1927. The 1928 figures represent an increase of five per cent. on those of the former year. The aggregate attendances of all out-patients in 1928 were 176,640, and in 1927, 151,099—an increase of 25,541, or 16 per cent. With regard to the non-venereal cases reporting for examination, there were, in 1928, 1,013 such cases; and in 1927, 617. This represents an increase in these non-venereal cases of 64 per cent. There is abundant evidence in addition to this that more cases are reporting during the primary and secondary stages of syphilis and in the early stages of gonorrhœa than has been the case formerly.

It is very difficult to come to a conclusion from any figures available whether or not there is a total increase in the volume of venereal diseases in the City. It might be argued that propaganda among the public and the instruction given to patients at clinics are resulting in a diminution of venereal disease, and that the increase in numbers attending the clinic, together with the increased aggregate attendances, only means that cases which would hitherto have been undiscovered are now coming for treatment and are accepting this to a fuller extent than formerly. On the other hand, there is no proof of this. All that is definite is that the numbers presenting themselves for treatment have increased.

The table on page 112 gives the disposal of patients who came for treatment during the months between 1st June, 1927, and 31st May, 1928. These figures show an almost all-round diminution in the patients defaulting before completing a course of treatment. The numbers defaulting after completing the course of treatment but before final tests as to cure are not so obviously reduced, and the numbers discharged from the centre after completion of treatment and final tests of cure are reduced. This table tends to show that there is some diminution in the total number of defaulters, and also that those who are defaulting are doing so at a later stage of their treatment. The experience of the different centres with regard to defaulters varies; for example, the female defaulters at the Western Infirmary are relatively more numerous than they are at Baird Street.

Indoor accommodation for the treatment of cases of venereal disease requiring hospitalisation is available for male cases at Belvidere Hospital, where 22 beds are retained for this purpose. During the year, 128 new cases were admitted to these beds. The total admissions of new cases and cases referred from the various clinics in the City were 230. The average day's residence per patient was 33·2 days. It should be noted that this number is not comparable with the corresponding number given in the total in the Annual Report of 1927, because in that year some cases referred from the clinics were included as new cases. In-patient accommodation for females was also available at Bellahouston Dispensary, but was very little made use of, only seven cases being admitted during the year.

In-patient treatment has now been transferred from Bellahouston Dispensary to Baird Street Reception House, where seven beds are reserved for venereal disease patients. In the general

	Syphilis		Gonorrhœa		Soft Chancre		Mixed Infections		Conditions other than Venereal		Total	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Total Number of Persons under treatment—												
From 1927, ...	921	1,108	388	206	13	1	54	128	—	—	1,376	1,443
Transfers from other Centres and Defaulters returned, ...	17	31	8	14	—	—	2	3	—	—	27	48
During 1928, ...	875	677	2,334	612	62	—	71	221	641	428	3,983	1,938
Totals, ...	1,813	1,816	2,730	832	75	1	127	352	641	428	5,386	3,429
Percentage of above totals who ceased to attend—												
(*a*) Before completing course of treatment for	19·7	7·8	39·2	7·6	30·6	—	26·7	11·9	—	—	*31·3	*8·2
(*b*) After completing a course of treatment but before final tests as to cure of ...	6·9	19·8	5·3	11·8	12·0	—	1·5	13·9	—	—	5·9	16·8
Percentage of above transferred to other centres after treatment for	5·8	3·4	6·1	3·4	13·3	—	16·5	·8	—	—	6·4	3·0
Percentage of above discharged from the centre after completion of treatment and observation for ...	3·9	6·4	13·1	38·9	13·3	—	·7	28·1	—	—	9·3	17·9
Percentage of above who, at the end of the year, were under treatment or observation for	63·4	62·4	36·0	38·3	30·6	100	54·3	45·1	—	—	46·9	53·7

* The percentages are calculated on total cases less non-venereal cases.

hospitals of the City—the Victoria and Western Infirmaries—a few cases of venereal diseases are treated from time to time in the wards, while in the Sick Children's Hospital eleven children were treated during the year. In the Eye Infirmary a small number of patients received indoor treatment. The main centre for female in-patient treatment is the Lock Hospital, which admitted 374 new cases. The total number of admissions to the Lock Hospital, old and new cases, was 471, and the average number of days' residence per patient was 47·5.

It must be remembered that a certain amount of treatment of venereal disease is also carried out in the large general hospitals of the Parish Council. The exact extent to which this is done is not known, as these cases are not available for grant under the scheme.

The voluntary system of treatment, that is, without official notification and without the application of any special powers regarding compulsory treatment of certain patients, is still on its trial, and, indeed, most of the efforts made to deal with the problem of venereal disease are still in the experimental stage. One thing, however, is certain—modern treatment applied to these diseases in their early stages can reduce to a minimum the possibility of the patient transmitting infection—in the majority of cases eliminating it entirely.

The following table shows the age distribution of cases treated during the year ending 31st May, 1928. These cases are those which came for treatment for the first time during the year under review. Those found not to be suffering from venereal disease are excluded.

The proportion of male cases to female under the age of 15 years remain much the same as last year, namely, about one to four.

498 cases of congenital syphilis received treatment.

Five cases of syphilis showed evidence of extragenital infection.

Age Distribution.

	Syphilis		Gonorrhœa		Soft Chancre		Mixed Infections		Total	
	M	F	M	F	M	F	M	F	M	F
Under 1 year, ...	29	84	—	—	—	—	—	—	29	84
1 year and under 5 years, ...	11	40	—	16	—	—	—	2	11	58
5 years ,, 15 ,, ...	39	111	—	21	—	—	—	6	39	138
15 ,, ,, 25 ,, ...	147	130	611	308	13	—	7	98	778	536
25 ,, and upwards, ...	649	312	1,723	267	49	—	64	115	2,485	694
Totals, ...	875	677	2,334	612	62	—	71	221	3,342	1,510

TREATMENT OF VENEREAL DISEASE AT THE MATERNITY AND CHILD WELFARE CENTRES.

A further increase in the provision for the diagnosis and treatment of venereal disease at the Maternity and Child Welfare Centres was made in 1928, a weekly session being now held at Shettleston Child Welfare Centre. Treatment is thus provided at six of the centres. There was an increase in the number of new cases seen—both in gonorrhœa and syphilis.

The following is a table of the number of new cases seen at each centre during 1928:—

Work Performed at Child Welfare Centres.

	Orr Street.		Cowcaddens		Adelphi Street, S.S.		Maxwell St., Partick		Avenuepark Street.		Shettleston (3 months)		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Tota
Out-Patients— New Cases suffering from													
Syphilis,	1	6	3	11	—	22	—	6	—	6	—	—	55
Gonorrhœa,	—	4	—	4	—	16	—	6	—	2	—	2	34
Mixed Infections,	—	—	—	1	—	—	—	—	—	—	—	—	1
Conditions other than Venereal,	8	31	10	35	1	35	4	77	1	48	—	—	250
Total, ...	9	41	13	51	1	73	4	89	1	56	—	2	340
	50		64		74		93		57		2		
Aggregate Attendances,	68	392	34	436	1	585	8	352	4	433	...	18	2,313
	460		470		586		360		437		18		
Pathological Examinations—													
Wassermann,	143		328		412		131		117		16		1147
Spirochaetes,	—		—		—		—		—		—		—
Gonococci,	20		31		59		35		18		8		171
Total, ...	163		359		471		166		135		24		1318

To the figures of this table must be added nine transferred cases of syphilis, two of gonorrhœ, and one of mixed infection. This gives a total number of 64 cases of syphilis, 36 of gonorrhœa, and two of mixed infection, which have been diagnosed. An analysis of the syphilis cases shows that 17 were cases of congenital syphilis, the remaining 47 being cases of mothers suffering from syphilis in a latent form. The majority of cases seen by the V.D. Officer of the Child Welfare Centres are referred to her by the other Child Welfare Officers for one of two reasons—(1) because the presence of the infection is suspected from the appearance of the child, or (2) because the mother has a suggestive obstetric history. The diagnosis rests with the V.D. Officer, with the result that she sees a large number of cases which ultimately prove to be non-venereal.

A further investigation of the 47 latent cases reveals the fact that 30 are pregnant women in attendance at an ante-natal clinic, and the infection has been discovered from the Wassermann Reaction. From the experience at the ante-natal clinics, it is apparent that the diagnosis of syphilis in the pregnant woman is not always easy. The obstetric histories in some cases do not conform to what has been generally accepted as indicative of infection with syphilis, and in any case, in a primipara suffering from latent syphilis no such history is obtainable; the only method of confirming the possibility of specific infection is by taking blood for the Wassermann Test. In these cases it was found desirable to take blood for the Wassermann Test from every pregnant woman in attendance at an ante-natal clinic. This has been done systematically at two of the clinics—Adelphi Street and Cowcaddens—and almost routinely at Partick and Maryhill. No difficulty has been found in getting the patients to consent to having the blood test done.

This investigation would have been impossible without the co-operation of Dr. Buchanan of the Public Health Laboratory and his staff. All the Wasserman Tests were done in that laboratory, and the large amount of work thus entailed is gratefully recognised.

At Adelphi Street and Cowcaddens, 584 patients' blood has been subjected to the Wassermann Test for syphilis. Of these 584, 29 were found to be infected with syphilis, and gave + + results, representing a percentage of 4·9. Ten gave + or ± results, and all these, on further examination and testing, proved to be negative.

The actual number of pregnant women suffering from syphilis who received anti-syphilitic treatment during pregnancy was 31. The following is the result of the pregnancies:—

Healthy Children, ...	18
Still Births, ...	—
Infected Children, ...	—
Miscarriages, ...	3
Not Terminated,...	10

In 1927, there were eight cases which had not terminated pregnancy by the end of the year. These eight all gave birth to healthy children during 1928.

Of the 34 cases of gonorrhœal infection, 22 were diagnosed in pregnant women. These received treatment, and no case of gonococcal ophthalmia neonatorum in the child occurred. The remaining twelve cases were diagnosed in patients who had given birth to children who subsequently developed gonococcal ophthalmia neonatorum. As has been said before, a number of patients who report at an ante-natal clinic are suffering from a vaginal discharge which is not gonorrhœal in origin, but which is due to a variety of other causes. These cases should and do receive suitable treatment, and an endeavour is made to clear up the condition before the termination of pregnancy. The two cases of mixed infection were found in post-natal cases.

The success of the scheme has been very materially assisted by the enthusiastic co-operation of the almoner nurse. Without her services the extent of the work done would have been very much less, and no scheme for the treatment of venereal disease is complete without such an appointment.

Nurse Almoner.—The number of persons who default from attendance for treatment for V.D. is still so large as to be disquieting. In 1925 a nurse almoner was appointed to visit these defaulters in order to induce continued attendance. Her work has been of great value, but it is evident from the following figures that personal persuasion in many cases is quite inadequate in making recalcitrant patients reform. The visits of the nurse are not resented, but as her report shows in many cases she can produce no effect on the patients. Indifference seems to be the chief reason for defaulting, and this is very difficult to overcome.

During the year 1928, the nurse paid 723 visits to 260 patients who had ceased attendance at the various centres for female patients. This is an increase on last year's figures which were 437 visits to 205 patients. Of the 260 patients visited, 23 were not found at the addresses given, four had gone to reside outwith the city boundary, and six had died in the interval. This leaves a total of 227 patients who could resume attendance. Of these patients 120 are now in regular attendance, and 107 have ceased to attend. Seven of these refused definitely to return for treatment; 100 made one or two attendances, and have now ceased to attend despite repeated visits.

These 107 patients can be classified, as follows:—

I. Syphilis—Latent Infections, 52; Congenital, 10; Infectious, 6.

II. Gonorrhœa—Non-Infectious, 5; Infectious 30.

III. Mixed Infections—Infectious, 2; Non-infectious, 2.

From this analysis, it appears that of the 107 cases who have ceased to attend 38 are in an infectious condition. From the yearly reports it is evident that there is no diminution in the number of defaulters from the female clinics, and during 1928 the nurse actually paid more visits per patient, with no improvement in the return of the patients. As has already been said, it is difficult to state definitely the cause for this, but there is no doubt that ignorance and indifference do play a very large part, and that further education of the public by lectures and films is necessary to make them realise the serious results of infection with V.D

SECTION VII.

HOSPITALS AND DISINFECTING STATIONS.

The difficulty experienced towards the end of 1927, in finding hospital accommodation to meet the demands for the admission of cases of measles and pneumonia continued into the early months of 1928. In order to ease the situation two of the child welfare country homes, Scotstoun and Mount Blow, were diverted from their usual function and devoted to the reception of young children who had recovered from measles or pneumonia in the fever hospitals, but who, on account of some minor complications, were not well enough to be returned to their own homes. Under this arrangement 73 children were transferred to Scotstoun Country Home, and 63 to Mount Blow during the early months of 1928, thereby setting free some 50 beds in the hospital for the admission of other serious cases.

With the considerably reduced number of cases of scarlet fever and diphtheria and the absence of measles in epidemic form in the latter part of 1928, there was not the same pressure on hospital accommodation as occurred in the previous year. Pneumonia, however, is usually the cause of a considerable amount of illness during the late autumn and early winter months, and may under adverse climatic conditions, and in the presence of fog, become exceptionally heavy. The increasing use of local authority hospitals for the treatment of the more serious cases which cannot be attended to at home creates a recurring and difficult hospital situation. The whole position as regards the admission of patients with respiratory diseases requires reconsideration. Recent experience indicates that a greater degree of selection of patients is essential. Many are admitted on a plea of urgency which the subsequent course of the case does not justify. Very young breast-fed infants are sent to hospital with doubtful benefit. The management of epidemics of respiratory disease involves a judicious mixture of home nursing and admission to hospital by a process of selection.

Altogether there were 14,503 admissions to local authority hospitals during the year, while 813 cases were accommodated in other institutions. This included 576 patients, suffering from pneumonia, treated in general hospitals.

Mearnskirk Hospital and Sanatorium.—The construction of this institution is nearing completion, and it is hoped that part of the accommodation will be ready for occupancy before the end of 1929.

Belvidere Hospital.—The plans for a new and much needed observation ward were completed during the year. The following extracts from the descriptive memorandum indicate the scope and character of the new erection.

BELVIDERE HOSPITAL.—PROPOSED OBSERVATION WARD.

It is proposed to erect a two-storey observation ward to contain 32 beds—18 on the upper flat and 14 on the lower flat. The need for additional accommodation for observation purposes has been acutely felt for many years in view of the varied nature of the affections now being treated and the desirability of preventing, as far as possible, the cross infection of wards, and the proposed observation ward will prove of very material assistance in the administration of the hospital.

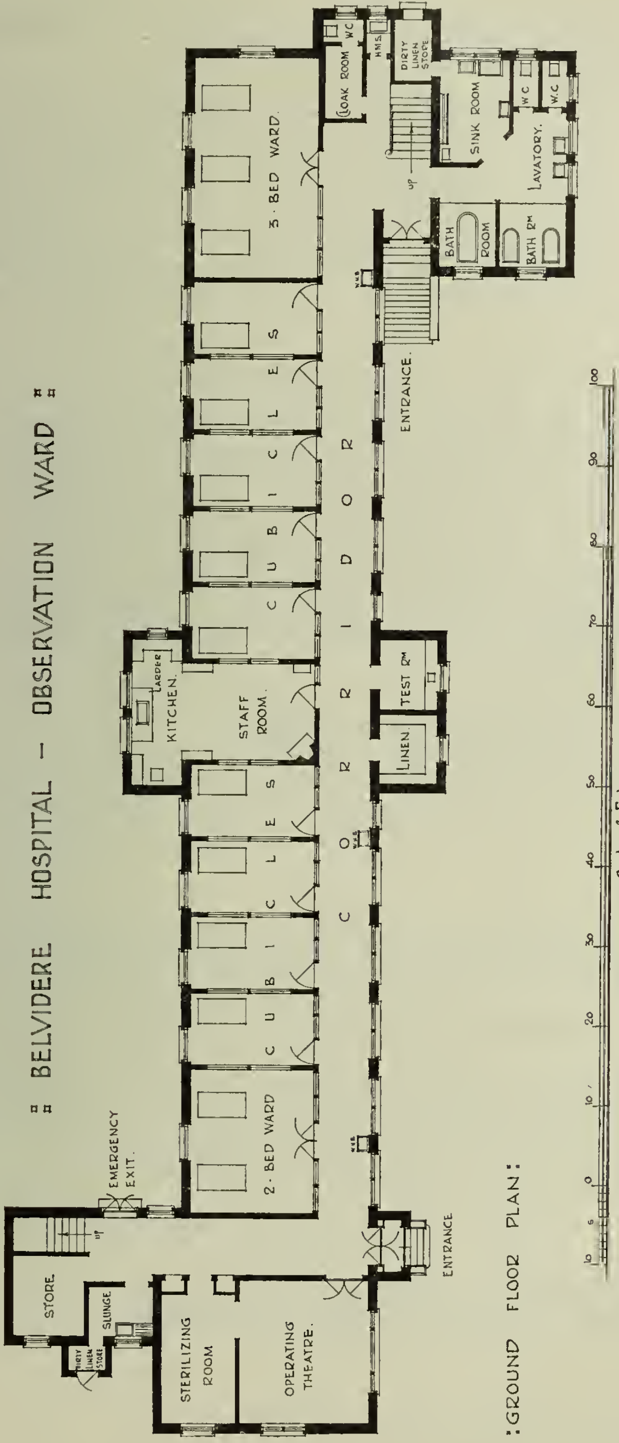
Careful consideration has been given to the selection of a site, and it was found impossible to select one with sufficient ground area to permit of the erection of a building of one storey.

Opportunity has also been taken to provide a small operating theatre and sterilizing room, the provision of which has become more and more necessary in a large fever hospital, especially as the modern treatment of discharging ears following acute infections necessitates operative procedure in many cases.

The accompanying plans show in detail the design of the proposed ward block. The ground floor contains 14 beds, arranged mainly in cubicles, but also containing a two-bed and a three-bed ward. Each cubicle measures 9 feet by 15 feet 3 inches, and is 10 feet from floor to ceiling, giving a floor area of 137 square feet and a cubic capacity of 1,370 cubic feet; each is separated from its neighbour by a partition, part of which, from 2 feet 6 inches high, will be of glass. On the corridor wall glass windows will be similarly placed at a height of from 4 feet. This should allow reasonable supervision. The two, three, and four-bed wards are designed with 9-feet bed centres, and have 1,380 cubic feet of air space per bed.

The staff room and kitchen have been arranged in a central position, with a built-out portion to contain a sink, gas cooker, and larder, while from the central portion, which will serve as a staff room, observation of the beds will be possible by means of glass partitions. Details of this arrangement are shown on the plan. Opposite the staff kitchen a test room and linen room have been placed. The corridor will contain three wash-hand basins.

The lavatory annexe—containing an adult bath and two children's baths, two wash-hand basins, two w.c.'s, a sink room, and a small compartment for dirty linen—is shown situated at one end, while, in order to avoid too long a carriage of bedpans, a slunge has been arranged at the other end of the block next to the sterilizing room. This arrangement will render unnecessary the erection of a double



BELVIDERE HOSPITAL — OBSERVATION WARD

: GROUND FLOOR PLAN :

sanitary annexe, usual in wards of this kind. A nurses' lavatory and cloakroom has also been provided at the end of the corridor next to the sanitary annexe.

The plan also shows the provision proposed to be made for an operating theatre and sterilising room, and the details as regards inter-communications and arrangements for lighting. The main staircase is situated at the south end of the block, and at the north end there will be a subsidiary staircase, required in the event of fire. Underneath the latter staircase a store is provided. On the upper flat the arrangements are similar to those above described, with the exception that four additional beds are provided above the operating theatre.

It is proposed to construct the proposed two-storey observation ward as follows:—(1) solid brick outer walls, faced with roughcast and finished inside with lath and plaster; (2) timber roofs, slated; (3) *floors, &c., ground floor*—wards and cubicles to be constructed of oak flooring on wood slips on top of concrete; corridors, operating and sterilizer rooms, slunge and sanitary annexe, and staff kitchen to be of concrete, finished with terrazzo; store and dirty linen apartments to be of concrete, finished with granolithic. With regard to the windows, it is proposed to introduce metal windows throughout the block, as shown on elevation and sections of Crittall manufacture, or other approved maker, as an alternative to timber casement windows.

21st March, 1928.

The hospital bed accommodation for infectious diseases is shown in Table XX in the Appendix, the second portion of which indicates the number of beds available in Corporation institutions and sanatoria, and the number of beds occupied by tuberculosis patients in other hospitals and sanatoria for which payment is made.

Owing to the early publication of the Annual Report this year, the usual information with regard to expenditure in Table XXI is for the financial year ending 31st May, 1928.

ANNUAL REPORTS OF THE HOSPITALS.

The Annual Reports submitted by the Physician-Superintendents of the hospitals and sanatoria form Part II of this report. In each case tables are appended, giving information as to the numbers admitted and dismissed, &c.

EAR, THROAT, AND NOSE DISEASES.

The following statement summarises the visits made to hospitals by the two specialists. Further details will be found in the various hospital reports:—

Record of Attendances and Operations by Aurists at Corporation Hospitals for the Year 1928.

	Patients.						Staff.		
	New Cases.		Old Cases.		Operations.		New Cases.	Old Cases.	Operations.
	Age −5	+5	−5	+5	−5	+5			
Belvidere, -	76	117	46	65	9	35	16	6	2
Shieldhall, -	19	17	23	28	9	7	1	1	—
Robroyston, -	—	2	—	1	1	4	3	1	7
Ruchill, -	90	102	64	103	62	93	13	13	6
Knightswood,	30	63	15	22	26	13	—	—	—
Total, .	215	301	148	219	107	152	33	21	15
Year 1927,	278	419	243	381	101	204	23	58	21

RECEPTION HOUSES.

The accommodation at Baird Street Reception House was utilised wholly during the year for the treatment of cases of ophthalmia neonatorum and artificial light therapy of tuberculosis. The former is dealt with in Section III of report, and the latter under "Tuberculosis."

The rear annexe of South York Street Reception House continued to be utilised for the isolation of young children prior to admission to the various country homes. Cases of scabies to the number of 82 and 46 verminous persons were also treated.

Contacts, &c., admitted to South York Street Reception House.

	1927	1928		
	Total	Adults	Children	Total.
Smallpox Contacts, ...	13	1	1	2
Enteric Fever ,, ...	3	—	—	—
Scarlet ,, ,, ...	4	—	1	1
Scarlet Fever and Diphtheria Contacts, ..	2	—	—	—
Diphtheria ,, ...	—	1	2	3
Whooping-Cough Contacts,	1	—	1	1
Measles Contacts, ...	—	—	2	2
Erysipelas ,, ...	—	—	1	1
Puerperal Fever Contacts,	—	—	1	1
Chickenpox ,, ...	—	1	2	3
Pulmonary Tuberculosis, ...	—	1	—	1
Diphtheria (+) for observation, ...	9	—	—	—
Streptococcal Carrier, ...	—	1	—	1
Dermatitis, Eczema, Vaccinia, and Erythema, ...	4	—	2	2
Impetigo, ...	29	1	35	36
Verminous Persons, ...	120	34	12	46
Scabies.	41	18	64	82
For Observation before admission to Country Homes, ...	188	—	202	202
From Flooded Houses, ...	20	—	—	—
Total, ...	434	58	326	384

DISINFECTING STATIONS.

The following tables summarises the washings and disinfections carried out at Ruchill and Belvidere Disinfecting Stations during the year 1928:—

		Belvidere	Ruchill	Total
Number of washings, ...		7,862	7,273	15,135
Average number per day, ...		25·2	23·8	49·0
Articles washed and disinfected, ...		278,376	305,881	584,257
Average number of articles per washing,		35·4	42·1	38·6
Fuel consumed, ...	tons	610	554	1,164
Fuel used per article, ...	lbs.	4·91	4·06	4·46
Soap and powder used per article, ...	ozs.	·40	·31	·35
Disinfectant do. ...	ozs.	·45	·49	·47

Number of Washings, Articles Disinfected, &c., for Years 1921-28 inclusive.

	Washings	Articles	Sprayings	Whitewashings
1921. ...	18,060	655,867	19,196	21
1922, ...	14,837	533,450	9,418	21
1923, ...	14,423	526.285	8,008	2
1924, ...	14,690	510,275	8,405	3
1925, ...	14,408	530,777	8,473	2
1926, ...	15,992	620,038	9,806	—
1927, ...	16,323	648,516	10,495	2
1928, ...	15,135	584,257	9,219	—

Books Disinfected, 1,611

Fumigation of Vessels.—Most of the fumigations of vessels for dis infestation of rats are done by this department. Information regarding this matter is given in the report of the work of the Port Local Authority, which forms Section IX.

Disinfection of Straw Packings.—The disinfection and certification of straw packings in order to comply with the regulations of other countries was continued during the year. Several firms have now provided suitable chambers for this purpose, and arrangements have been made whereby the department is notified when they intend to disinfect further supplies in order that the procedure can be supervised. Very few disinfections of this nature were done at the Local Authority Disinfecting Stations during the year, those only being undertaken for odd lots required by firms whose volume of business is small.

Disinfection of Second-hand Clothing, &c.—Disinfection of second-hand clothing for export to Ireland, as required by the regulations issued by the Irish Free State, continued throughout the year. In all, 2,075 consignments were disinfected and certificates issued, the total amount received in respect of charges being £484 0s. 9d.

SECTION VIII.

OFFENSIVE TRADES.

The number of offensive businesses in the City on the register at 31st December, 1928, was 71, which is an increase of one on the number so registered at the end of the previous year.

The following shows the nature of these businesses :—

	1928.	1927.
Bone Boilers, ...	8	8
Tallow Melters, ...	20	20
Manure Manufacturers,...	8	8
Gut Cleaners, ...	3	4
Hide and Skin Factors,...	8	8
Soap Boilers, ...	10	11
Tanners, ...	8	8
Glue and Size Manufacturers, ...	3	3
Horse Slaughterer, ...	1	1
Knacker, ...	1	1
Tripe Cleaner, ...	1	—
	71	72

During 1928, several applications were made for registration or renewal of registration of premises for carrying on offensive trades.

Horse Slaughterers and Knackers.—The annual renewal of licences, as required by statute, for the carrying on of the businesses of slaughterers of horses or knackers was again granted in respect of two establishments in the northern district of the City.

Soap Boiler.—A request was made for the transfer of a business of this nature to smaller premises which, however, were reported by the Master of Works to be in such a state of disrepair that he suggested that the buildings were entirely unsuitable. Applications in regard to two other premises were then submitted, but one of these was found to be too close to dwelling-houses. The other premises required enlargement of the windows, suitable arrangements for drainage, provision of hoods for carrying away the vapours arising during the process, and various other sanitary requirements. A licence was granted provided these defects were remedied. Owing to other circumstances the business was not established.

At a later date application was made by another firm to establish the business of soap boiler in the premises referred to above as unsuitable, but when the matter was again referred to the Master of Works he stated that the building had been condemned as dangerous. Proceedings were thereupon discontinued.

SECTION IX.

GLASGOW PORT LOCAL AUTHORITY.

An event of great importance was the ratification in March, 1928, by the British Government of the International Sanitary Convention of Paris of 1926, an instrument designed to unify and simplify the procedure for the prevention of seaborne infection and to establish international regulations for this purpose as regards the major infections, including typhus and smallpox. Detailed regulations applying the terms of this convention to the Port Local Authorities of this country are under preparation by the Government.

An important alteration in procedure as regards deratisation of ships is contained in Article 28 of the Convention, and the Port Local Authority approved of the issue of the new deratisation exemption certificates in June, 1928. A copy of the instructions to be carried out and the duties to be performed, along with a report on the whole question of the Port administration, was laid before the Authority, with special reference to the considerable and added responsibilities laid on the Authority by the Public Health (Unsound Food) Regulations (Scotland), 1925, and the International Sanitary Convention. The proper functioning of the Port administration had been under consideration since 1927, when, following on a detailed report on the boarding arrangements at Greenock and a visit of inspection by representatives of the Authority to various ports in England, the staff at the Greenock Boarding Station was strengthened. Further reorganisation was decided upon during the year, involving the appointment of a Supervising Inspector, two additional Food Inspectors, and three Rat Catchers and Searchers. The Port staff now consists of a Boarding Medical Officer and a Supervising Inspector, six Sanitary Inspectors for food inspection, infectious diseases, and nuisances, three Inspectors at Greenock Boarding Station, and four Rat Catchers and Searchers.

Summary of Work during the Year 1928.—1,596 vessels passed the boarding station bound for the Port of Glasgow. Of these 540 had come from, or called at ports infected under the Cholera Order; 271 direct or with foreign inward cargo on board, and 269 light or with outward cargo on board. There were also 653 vessels from Irish Free State. The total tonnage of the 1,596 vessels was 4,565,519 tons, as compared with 1,676 ships and 4,999,981 tons during 1927.

Number of SHIPS ARRIVING from Foreign and Irish Free State Ports during the Year 1928.

Month.	From Infected Ports.						Total of A and B.			From Non-Infected Ports, with or without Cargo.			Total from Foreign Ports.			From Irish Free State Ports.
	Class A Direct with Foreign Inward Cargo.			Class B Light, or with Outward Cargo.												
	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.	Crews.	Pass.	Ships.
January,	27	2,043	...	26	1,699	...	53	3,742	...	86	3,216	317	139	6,958	317	43
February,	22	1,237	...	15	915	...	37	2,152	...	92	3,607	449	129	5,759	449	50
March,	26	1,954	...	24	1,654	128	50	3,608	128	80	3,217	460	130	6,825	588	52
April,	22	1,549	...	27	1,513	...	49	3,062	...	80	4,099	876	129	7,161	876	56
May,	27	2,083	6	24	1,778	122	51	3,861	128	97	4,852	1,295	148	8,713	1,423	53
June,	20	1,465	...	19	1,155	...	39	2,620	...	94	5,194	3,464	133	7,814	3,464	55
July,	17	1,198	...	20	1,165	...	37	2,363	...	87	5,676	5,032	124	8,039	5,032	59
August,	18	1,352	...	25	1,423	6	43	2,775	6	96	5,072	1,731	139	7,847	1,737	56
September,	13	1,096	...	28	1,584	112	41	2,680	112	94	6,192	1,480	135	8,872	1,592	61
October,	29	1,592	5	16	781	...	45	2,373	5	80	4,985	1,188	125	7,358	1,193	68
November,	22	1,784	...	18	1,160	...	40	2,944	...	80	3,251	791	120	6,195	791	52
December,	28	2,100	...	27	2,174	...	55	4,274	...	90	3,624	936	145	7,898	936	48
Totals,	271	19,453	11	269	17,001	368	540	36,454	379	1,056	52,985	18,019	1,596	89,439	18,398	653
1927,	274	19,800	17	235	14,358	119	509	34,158	136	1,167	56,552	17,915	1,676	90,710	18,051	719

The following table shows the number and nationality of overseas vessels, with their crews, arriving at the Port of Glasgow during the year 1928 as compared with 1927 :—

Nationality	Number of Vessels		Number of Crews	
	1927	1928	1927	1928
American, ...	51	79	2,068	3,019
British, ...	1,334	1,286	80,693	80,460
Belgian, ...	—	1	—	13
Danish, ...	12	7	233	124
Dutch, ...	23	12	787	245
Finnish, ...	8	13	165	285
French, ...	9	4	235	126
German, ...	18	16	282	322
Greek, ...	3	4	78	108
Italian, ...	6	6	175	169
Japanese, ...	16	13	1,124	925
Jugo-Slavian, ...	12	16	424	509
Latvian	—	1	—	20
Norwegian, ...	98	67	2,024	1,300
Portuguese, ...	3	1	122	24
Panamanian, ...	—	1	—	26
Russian, ...	4	3	136	103
Spanish, ...	69	53	1,958	1,411
Swedish, ...	9	13	173	250
Roumanian, ...	1	—	33	—
Total. ...	1,676	1,596	90,710	89,439

INFECTIOUS DISEASES.

The following table shows the number and nature of the cases of disease noted during the year 1928. The first column gives the total number of cases. Column 2 shows that 157 cases were dealt with at other ports during the voyage. Particulars of these are not always available, but where necessary, disinfection was carried out on the arrival of the ship at Glasgow. The other columns show how the 191 cases found on arrival were dealt with; 78 cases were removed to hospital in Glasgow; and 113 cases were permitted to go home. Sixteen deaths were recorded during the year.

TABLE SHOWING DISEASES AND NUMBER OF CASES DURING THE YEAR 1928.

Disease.		Total Number of Cases.	Cases dealt with in other Ports.	Cases found on Arrival.	Cases sent to Hospital in Glasgow.	Cases sent Home.	Deaths.
Cholera,	... ...	1	1	—	—	—	—
Plague,	... ...	1	1	—	—	—	—
Smallpox,	... ...	4	4	—	—	—	—
Enteric Fever,	...	15	12	3	3	—	—
Scarlet Fever,	...	8	5	3	3	—	—
Diphtheria, ...	...	10	7	3	2	1	1
Measles,	... ...	62	52	10	6	4	—
Whooping-Cough,	...	6	4	2	—	2	—
Chickenpox,	...	26	6	20	20	—	—
Phthisis,	... ...	19	7	12	5	7	3
Venereal Disease,	...	31	6	25	—	25	1
Pneumonia, ...	...	39	11	28	23	5	5
Erysipelas, ...	...	3	1	2	1	1	—
Dysentery, ...	...	4	1	3	2	1	—
Malaria,	... ...	8	4	4	1	3	—
Influenza,	... ...	19	2	17	1	16	—
Mumps,	... ...	9	3	6	1	5	—
Dengue Fever,	...	18	1	17	1	16	—
Tonsilitis, ...	...	3	1	2	—	2	—
Tuberculosis (Non-pulmonary),		3	1	2	1	1	1
Buboes,	... ...	4	2	2	1	1	—
Diarrhœa, ...	...	2	2	—	—	—	—
Encephalitis Lethargica,		2	2	—	—	—	—
Beri-Beri, ...	...	1	1	—	—	—	—
Ophthalmia....	...	1	—	1	1	—	—
Scabies,	... ...	2	—	2	—	2	—
Other Illnesses,	...	47	20	27	6	21	5
Totals, ...	...	348	157	191	78	113	16
1927,	... ...	310	122	188	54	134	14

IRISH FREE STATE TRAFFIC.

Twelve ships arrive weekly, carrying annually large quantities of foodstuffs. Considerable difficulty is sometimes experienced in carrying out the provisions of the Unsound Food Regulations, owing to the despatch with which this traffic is handled. All vessels from the Irish Free State are boarded on arrival at the Boarding Station, Greenock, and also at Glasgow.

653 ships arrived during 1928 as compared with 719 during 1927. The arrivals each month are given in a table on page 125.

ALIENS ORDER, 1920.

All Aliens intending to remain in this country for a period of three months or more are subject to medical examination. During the year 1928, 646 such persons were examined.

During the year 70 ships carrying Alien passengers entered the Port of Glasgow, a decrease of 2 as compared with the arrivals for 1927. Of the 70 ships 38 were from U.S.A. ports, 26 from Canadian ports, 3 from European ports, and 3 from cruises.

There were 6 Alien passengers rejected as a result of medical examination, but they were granted conditional landing. The rejections were for the following reasons:—2 United States citizens, measles; 1 United States citizen, broncho-pneumonia; 1 United States citizen, whooping-cough; and 2 United States citizens, chickenpox.

RETURN OF ALIEN PASSENGERS ARRIVING IN GLASGOW DURING 1928.

Nationality	Non-Transmigrants	Transmigrants	Total
Americans, ...	5,233	—	5,233
Europeans, ...	40	32	72
Asiatic, ...	7	—	7
Uruguayan, ...	1	—	1
Argentine, ...	—	1	1
Totals, ...	5,281	33	5,314
Do. 1927, ...	4,978	45	5,023

During the year 115 citizens of the United States, 8 Europeans, and 1 Asiatic, arrived at Glasgow for permanent residence in this country, *i.e.*, a stay of a year or longer.

EMIGRANTS.

During 1928, 170 ships carrying emigrants left the Clyde, an increase of 43 as compared with 1927. Of these 43 sailed for America, an increase of 7, and 127 sailed for Canada, an increase of 36 compared with the previous year. Passenger ships sailing from the Clyde for Australia and New Zealand embark passengers at Liverpool.

The following is a return of emigrants and ships which left Glasgow during 1928:—

Country.	Ships.	British Subjects.	Other Nationalities.	Total.
America, ...	43	12,598	1.963	14,561
Canada, ...	127	23,088	1,583	24,671
	170	35,686	3,546	39,232
1927, ...	127	36,814	4.063	40,877

RAT DESTRUCTION.

No alteration has been made on the procedure adopted for the fumigation of ships by SO_2. Such fumigations are done by the Public Health Department.

HCN fumigations are carried out by private firms under the supervision of a medical officer, when a certificate is requested. Three certificates were granted during the year for HCN fumigations. The regularity of fumigation of vessels by SO_2 has proved effective, as shown by the considerable diminution of rats on ships.

110 vessels were fumigated in accordance with the instructions issued by the Scottish Board of Health. Of these 91 were from infected ports and 19 from non-infected ports. In 23 instances certificates of exemption from fumigation were granted, where the vessel was new or had been deratised within six months, and 36 existing fumigation certificates were endorsed. These 36 vessels were loaded at a distance of 8 feet from the wharf, rat guards affixed and all other methods adopted to prevent the migration of rats. Poison is not used at this port.

After a vessel is fumigated a thorough search is made for rats, and the following table summarises the results of fumigations, trappings, &c., during the year :—

			Result of Search after Fumigation		
	Deratised by SO_2	Deratised by HCN	No. of Ships on which no Rats were found.	Total No. of dead Rats found on remaining ships.	Rats caught by Trapping
From Infected Ports, ...	90	1	70	818	308
From Non-Infected Ports,	17	2	13	327	67
Docks, Warehouses, and other Premises, ...	—	—	—	—	10
	107	3	83	1,145	385

Of the 1,530 rats trapped or destroyed by fumigation, 955 were black rats and 575 were brown or grey rats. 211 were submitted to the City Bacteriologist with negative results. Almost all the rats were found in the holds and store rooms of vessels. Of the total number of rats, 1,351 were male and 179 female.

NUISANCES ON SHIPBOARD.

2,665 inspections and reinspections of vessels in harbour were made during the year. The visits to oversea steamers numbered 1,591, and the revisits 721. In oversea sailing vessels, 1 inspection was made and 2 revisits, while 293 coasting steamers and 23 sailing craft were examined, revisits being paid to 30 of the former and 4 of the latter. 89 verbal warnings were given to masters where nuisances of a minor nature were found, and 185 intimations and 4 notices (under the Public Health Act) were served where defects existed. 703 verbal instructions were given, and 40 notices served on masters of vessels *re* locking-up of water-closet accommodation while vessels were in port.

The nuisances discovered numbered 1,796—in forecastles, rooms, &c., 562, and water-closets, wash-houses, &c., 271, while structural defects were found in 417 instances—314 within crews' quarters, and 103 in water-closet and lavatory compartments. General complaints were recorded in 546 instances.

Sanitary Defects and Nuisances.—The following table shows the nuisances found on board vessels arriving in the harbour :—

ARISING FROM STRUCTURAL DEFECTS.

Forecastles, Rooms, &c.—	1926	1927	1928
Overhead decks leaking, ...	24	75	73
Ports defective, ...	91	190	127
Skylights out of repair, ...	5	3	3
Without scupper-pipe or same cemented, ...	1	—	2
Ventilators plugged, out of repair or unshipped,	2	1	2
Without bogies or funnels, or such out of repair,	10	11	11
Inadequately lighted or ventilated, ...	3	6	21
Radiators or steam-pipes defective, ...	10	20	20
Doors to forepeak and forecastle broken, ...	1	5	2
Ships' sides leaking, ...	1	—	1
Anchor chain exposed by sheathing being out of repair,	1	2	1
Doors of food lockers and seats out of repair, ...	1	20	41
Requiring wood-sheathing or cork-spraying for "sweat,"	2	2	3
Hawse-pipes defective, ...	1	2	2
Floors broken and out of repair, ...	1	20	2
Bulkhead between forecastle and w.c. compartment broken, ...	—	2	1
Scuppers required, ...	1	—	1
Waste pipe leaking, ...	1	—	1
	156	359	314
Water-closets, Urinals, Wash-houses, &c.—			
Flushing apparatus, basins or discharge pipes defective, ...	15	33	32
New water-closet required, ...	2	13	10
Ports defective,...	—	3	2
Floor and woodwork out of repair, ...	—	1	2
Doors broken and new locks required (w.c's. must be locked while ship is in harbour),	13	8	18
Ventilators plugged, ...	1	1	3
Woodwork of w.c. basin broken, ...	16	32	23
Compartments defective in light and ventilation,	5	12	13
	52	103	103

ARISING FROM MISUSE.

Forecastles, Rooms, &c.—	1926	1927	1928
Alleyways and companionways dirty, ...	78	100	85
Floors, mat coverings, ceilings, woodwork, &c. dirty,	115	138	136
Interior of ships' sides or woodwork dirty (to be limewashed or repainted), ...	74	93	92
Galleys dirty, ...	13	9	12
Tables and benches dirty, ...	172	192	203
Scuppers choked (water lying stagnant), ...	11	19	24
Bunks dirty, ...	14	2	10
	477	553	562

Water-closets, Wash-houses, &c.—	1926	1927	1928
Floors, ceilings, and woodwork dirty, ...	89	75	77
Basins, hoppers, or troughs fouled, corroded, or choked,	106	113	105
Scuppers choked, ...	23	36	39
Wash-house dirty, ...	4	4	3
Interior requiring limewashing or repainting, ...	52	50	44
Waste-pipe defective, ...	2	2	3
	276	280	271

GENERAL NUISANCES.

	1926	1927	1928
Food lockers dirty, ...	208	257	212
Bilges (hold) dirty, ...	44	64	55
Gear and food-stuffs stored in sleeping compartments,	4	14	9
Drinking-water tanks dirty and in need of re-cementing,	67	85	57
Do. out of repair or uncovered, ...	4	2	2
Accumulation of rubbish in forecastle or on deck, ...	56	49	102
Forecastle infested with vermin, ...	20	53	99
Bedding dirty or verminous, ...	16	18	10
Bilges ventilating into forecastle, ...	—	—	—
	419	542	546

The following table shows the number of oversea and coastwise ships inspected in the harbour during the years 1926-1928:—

	Inspections.			Re-inspections.		
	1926	1927	1928	1926	1927	1928
Oversea Steam,	1,598	1,674	1,591	350	531	721
,, Sail,	8	1	1	3	—	2
Coast Steam,	278	282	293	34	22	30
,, Sail,	28	30	23	5	4	4

	Re-inspections.		
	1926	1927	1928
Intimations, ...	55	186	176
Warnings, ...	177	138	89
Notices, ...	7	7	4
Letters to other Port Authorities, ...	20	31	40
Nuisances—			
Functional, ...	753	833	833
Structural, ...	208	462	417
General, ...	419	542	546

Of the total arrivals, 1,286 were British and 310 vessels sailed under foreign flags, the latter including 18 different nationalities, Americans, Norwegians, Spaniards, Germans, Jugo-Slavians, Swedes, and Finns predominating.

Pollution of River.—In order to reduce pollution of the river, the Clyde Navigation Trustees some years ago provided water-closet accommodation ashore for seamen. Intimation is therefore given to masters that all conveniences aboard ship must be kept locked while ship is in port. Complaints are frequently received from Deputy Harbour Masters and others that the nuisance still continues. There is, however, no legal power under which action can be taken, at least so far as obtaining a conviction.

Rags, Hair, Hides, and Bones.—The following table shows the imports of rags, hair, hides, and bones, with the source of origin and number of shipments:—

Source of Origin.	No. of Ships.	Rags.	No. of Ships.	Hair (Various.)	No. of Ships.	Hides (Various.)	No. of Ships	Bones.
		Bdls.		Bdls.		Bdls.		Bags.
Continent, - -	70	2,130	25	1,222	66	25,788	1	83
Canada, - - -	2	28	17	1,400	5	12	...	...
United States, - -	4	13	45	5,804	9	326	...	...
South America, - -	...	...	10	393	7	16,788	8	1,932
Australia & N. Zealand,	2	7	...	...	21	6,328	...	...
India, - - - -	1	12	...	...	9	2,470	14	3,300
South Africa, - -	...	...	...	...	3	351	5	2,034

In addition to the foregoing, there is a considerable quantity of rags imported from Irish Free State ports.

UNSOUND FOOD REGULATIONS.

The following table shows the character and quantity of the foodstuffs imported direct during 1928 (but does not include coastwise or transhipped cargoes), a percentage of which was examined by the Food Inspectors before removal :—

Article.	Weight.		Article.	Weight.	
	Tons.	Cwts.		Tons.	Cwts.
Apples,	38,058	11	Lemons,	2,577	11
Apricots,	219	11	Liquorice,	24	3
Almonds,	835	18	Meal (various),	23,066	18
Bananas,	328	19	Meats (canned, &c.),	4,285	18
Bacon,	215	10	Melons,	2,359	14
Baking Powder,	117	18	Milk (canned),	256	12
Barley,	69,665	19	Milk (powder),	156	4
Butter,	1,782	11	Molasses,	925	11
Cereals (Oats, Rye, &c.),	135,946	9	Macaroni,	390	15
Cheese,	4,161	10	Nuts (various),	2,445	14
Coffee,	....	7	Oils (various),	11,401	4
Cocoa,	118	19	Onions,	45,203	16
Condiments,	7,207	9	Oranges,	17,439	1
Confectionery,	654	17	Orange and Lemon Peel,	97	7
Cream of Tartar,	288	7	Peaches (canned),	1,100	8
Eggs,	42,919	16	Pears,	2,079	18
Eggs (liquid),	5,642	19	Pears (canned and dried)	1,903	3
Eggs (albumen),	394	13	Pineapples,	1,430	6
Fish (canned, &c.),	575	4	Plums (canned and dried),	523	11
Fruit (canned),	5,615	16	Pomegranates,	55	18
Fruit (dried),	6,175	10	Potatoes,	5,546	3
Fruit (pulp),	473	19	Peas,	9,582	9
Flour (various),	75,041	...	Rice,	10,561	8
Farinaceous Foods,	2,704	3	Sundries,	5,693	7
Glucose,	4,012	2	Sugar,	30,208	13
Grapes,	4,306	19	Syrup,	173	4
Grape-Fruit,	746	8	Tomatoes,	135	3
Ham,	8,546	13	Tomatoes (canned),	1,142	12
Honey,	68	4	Vegetables (canned),	1,890	13
Lard (pure),	2,891	1	Wheat,	189,182	10
Lard (compo.),	152	1			

Total weight, ... 791,708 tons 17 cwts.

The following food-stuffs were found unfit and disposed of to the satisfaction of the Medical Officer of Health :—

Article.	Weight.			Article.	Weight.		
	Cwts.	Qrs.	Lbs.		Cwts.	Qrs.	Lbs.
Apples,	477	....	12	Onions,	884	2	....
Apples (canned),	....	2	....	Oranges,	6,149	....	....
Almonds,	1	...	....	Oranges (bitter),	30	....	....
Apricot Pulp,	1	2	....	Peas,	1,000	....	....
Currants,	42	2	....	Peas (canned),	101	3	12
Confectionery,	1	....	12	Potatoes,	12	....	...
Ginger (dried),	....	2	9	Prunes,	....	1	12
Grease and Fat,	2,891	2	....	Peaches (canned),	34	....	....
Ham,	....	2	....	Pears (canned),	111	2	4
Lard,	3,322	....	....	Raisins,	48	....	....
Melons,	3	....	....	Sausages,	....	2	12
Maize,	220	...	....	Sugar,	2	....	....
Oats,	260	....	....	Tomatoes (canned),	1	1	2

Total weight, - - 15,596 cwts. 1 qr. 19 lbs.

The foregoing table shows the great variety of the food-stuffs inspected and dealt with. The method of procedure in each case is similar. The suspected food-stuffs are detained for further inspection, the consignee is communicated with and a suitable time fixed for the re-examination of the material. As a rule, the consignees, on being satisfied as to the unsoundness of the food, are amenable to reason, and empower the inspector to have the condemned food disposed of, thereby obviating the necessity for obtaining a warrant from the Sheriff or Magistrate. Much time is often taken up in examining and supervising the reconditioning of consignments.

Inedible Grease.—A communication was received from the Port Medical Officer of Manchester in December, 1927, advising that 69 casks of inedible fat had left Manchester addressed to a food manufacturer outwith the city. This particular consignment arrived with the Custom's entry "This consignment to be used for soap making purposes." As matter of fact, it was ultimately used in the manufacture of lard. This firm imports large quantities of genuine material—accompanied by an official certificate that "it is derived from animals free of disease, in accordance with the Oversea Meat Regulations,"—but had recently taken to importing, via a middleman and also direct, inedible grease. There were altogether nearly 700 tons brought in by or on behalf of this firm between March 27th and May 28th. It was apparently the practice of the firm to treat the material by a process which subjected it to a temperature of 300° to 400° F. for the purpose of destroying bacteria and to enable them to drive off any denaturing substance. The fat was bleached and deodorised and presumably mixed with a quantity of pure lard, and the whole compound sold as pure lard.

Prosecution was taken under Article (*b*) of the Second Schedule to the Public Health (Oversea Meat) Regulations (Scotland), 1925, for importing meat, without official certificates, contrary to Article 6 of the Regulations. The firm pleaded guilty to the charge, and a penalty of £100 was imposed.

Importation of Grease from Ireland.—During the year the trade in fats and grease underwent rapid development in the form of consignments imported into the Port of Glasgow by coasting vessels, chiefly from Ireland, the consignees being in most cases a lard firm outwith the city. The quantities of this material arriving from the Irish Free State and Northern Ireland for the three months September, October, and November, amounted to 520 cwts., from Belfast, Londonderry, and Dublin; while during the month of October 300 cwts. of grease were imported from Waterford, Limerick, and Cork. These consignments are set out in detail in the table on page 136.

The fat from Belfast consisted of mesenteric and omentum fat, without preparation of any kind. It was imported in bags until 12th November, since when, as the results of representations made, it has arrived in barrels and in good condition.

As regards the grease or tallow which forms the major volume of these imports, it has been necessary to condemn one consignment and detain three others for a guarantee that the material would not be used for edible purposes. Samples of these various consignments have been submitted to analysis by the Corporation Chemist, and his results on each are detailed in the table which follows. It will be observed that the percentage of free fatty acids in the several samples varies within wide limits, from small amounts to as much as 19 per cent. A decision whether to pass for food purposes or detain consignments for a guarantee that they will be used only for technical purposes is difficult to reach, and the Medical Officer for the Port of Manchester informs me that he has a similar difficulty. In the meantime, as will be noted from the table, a consignment yielding from 6·3 to 8·25 per cent. of free fatty acids has been obtained. The fact that this grease is arriving with such proportions of free acid appears to indicate, at any rate, that little care is taken of its degree of freshness.

There is, however, another aspect of the matter. The Veterinary Surgeon has recently reported on the importation of parts of carcases from old and, in many cases, diseased cows from Northern Ireland. His experience as to the condition in which this meat arrives raises considerable dubiety as to the source of the fat and grease imports, which are now also arriving in the Port of Glasgow. As regards these consignments from Southern Irish Ports, they are not subject to the Oversea Meat Regulations, 1925, and there is nothing to govern the suitability of this material for conversion into food, except the result of inspection and analysis on arrival. The Oversea Meat Regulations govern the importation of grease and tallow from other countries, by requiring that they be accompanied by an official certificate of freedom from disease at the time of slaughter of the animals. This material comes into the category of "conditionally admissable meat," while unrecognisable parts of a carcase belong to the category of "prohibited meat."

These facts were reported to the Port Local Authority, who instructed a communication to be sent to the Department of Health for Scotland with a recommendation that the Oversea Meat Regulations, 1925, be made applicable to Ireland or that protective regulations be framed having the same effect. There is also an absence of regulations governing the handling of meat and other food-stuffs at the docks, and it was recommended that the Department of Health issue suitable regulations on the lines of those in force in England, under the Public Health (Meat) Regulations.

The following table shows the results of examinations of samples of fat and grease arriving at Port of Glasgow coastwise:

Ship.	From	Date.	Analyst's Results.
Aranmore	†Limerick	9/7/28	Decomposed.
,,	† ,,	16/7/28	19·5 per cent. of free fatty acid
Eddystone	Waterford	24/10/28	‡ 3·35 ,, ,,
Sanda	*London	27/10/28	‡ 4·0 ,, ,,
,,	* ,,	,,	‡ 9·0 ,, ,,
Eddystone	*Plymouth	3/11/28	‡ 3·45 ,, ,,
,,	* ,,	,,	‡ 3·26 ,, ,,
Scottish Coast	*Liverpool	9/11/28	‡ 5·86 ,, ,,
,,	* ,,	,,	‡ 4·35 ,, ,,
Sanda	*†Plymouth	26/11/28	10·0 ,, ,,
Fastnet	†Cork	27/11/28	10·5 ,, ,,
Puma	Dublin	3/12/28	0·09 ,, ,,
,,	,,	,,	0·10 ,, ,,
			(Mixture of cotton seed oil, &c.)
Vulture	Belfast	4/12/28	Free from disease
Magpie	,,	14/12/28	2·23 per cent. of free fatty acid
,,	,,	,,	1·12 ,, ,,
Moorfowl	,,	15/12/28	4·5 ,, ,,
Scottish Coast	*Liverpool	15/12/28	7·62 ,, ,,
			6·31 ,, ,,
			6·40 ,, ,,
			6·57 ,, ,,
			8·25 ,, ,,
			7·39 ,, ,,
			6·59 ,, ,,

* No proof that the port of shipment shows the grease to be English collected. Possibly may be of Free State origin, and transhipped.

† Importer advised that grease was high in free fatty acid, and that the material was detained pending guarantee as to ultimate disposal for non-edible purposes.

‡ Consignees outwith Glasgow. Local Authority concerned notified.

Raisins.—A consignment of 2,680 cases of Australian Dried Raisins arrived per s.s. "Clan Murdoch," on 15th September, and was found to be heavily infested with moths and their caterpillars, both in the living and dead state—a quite unusual degree of infestation.

After careful examination and consideration it was arranged with the importers to submit the material to a fumigating and cleaning process, the latter by means of the Duckworth Fruit Cleaning Machine. The former procedure satisfactorily accounted for the moths, and the latter permitted sufficient separation of the debris from the raisins to allow of their ultimate marketing for consumption. The condition in which this consignment arrived gave rise to a considerable amount of difficulty in dealing with it satisfactorily, and the whole circumstances were reported to the Australian Dried Fruit Board, who were requested to take such steps as might be feasible to avoid the arrival of dried fruit in a similar condition, and to consider whether it would be possible to have the fruit treated prior to its despatch from Australia. All correspondence relating to the consignment was forwarded to the Department of Health for Scotland.

Canned Fruit.—A consignment of canned peaches and pears, ex s.s. "Eurania" from Vancouver, which arrived on 16th November, was found to contain an abnormal number of blown and heated tins, stated to have been due to too close proximity to a source of heat on board ship. Very considerable difficulty was experienced in separating the saleable from the unsaleable material, involving examination of numerous samples by the City Analyst, on whose report procedure was based as to condemnation. The Analyst's results permitted discrimination to be exercised as follows:—A normal tin showing ·17 grains per lb., slight discoloration, 1·17 grains, badly discoloured, 2·67 grains, and blown tins 3·89 to 4·03 grains. Examination of this consignment occupied over a month with the result that 286 cases of pears and 57 cases of peaches, weighing 123 and 25 cwts. respectively, were condemned and destroyed, the remainder of each consignment being liberated for consumption.

Currants.—A consignment of currants ex s.s. "Etrib" from Patras on 13th November, was found to be infested with a small beetle, regarding which the City Bacteriologist reported:—"The fruit shows no injurious effects from the presence of the insects. The insect is a beetle and appears superficially of one species, but microscopical examination reveals the fact that there are two very closely allied species, differing in slight details, the one being *tribolium confusum*, which is in the majority, and the other being *tribolium ferrugineum*. The former is known as the confused flour beetle and the latter as the red-rust flour beetle. These beetles are chiefly associated with flour, meal, grain, and sometimes rice, but may wander on to other food-stuffs." In these circumstances the fruit was liberated for consumption, after a cleansing and insecticide process, as a result of which 35 cwts. were removed by the Cleansing Department and 7 cwts. were released for pheasant feeding. The total number of cases handled in the cleaning process was 7,163 with an approximate weight of 3,581 cwts.

PUBLIC HEALTH (PRESERVATIVES, &c., IN FOOD) REGULATIONS (SCOTLAND), 1925.

The above Regulations apply to all imported articles of food-stuffs, except where these are intended for re-export or for use as ships' stores. The following paragraphs give an indication of the administration of these Regulations, so far as they come within the purview of the Port Local Authority.

A letter was received from the Scottish Board of Health on the 20th November, 1928, intimating that they had reason to believe that oranges were being treated prior to shipment, by being dipped in preparations containing boric acid and formaldehyde, and requesting that samples might be obtained and the results of analyses communicated to the Board. The following table shows the number, country of origin, and Analyst's report on samples which have been taken from the date of the Board's letter up to the end of the year :—

No. of Samples.	Country of Origin.	Analyst's Report.		
1	Burriana (Spain),	Boron preservatives, expressed in grains of Boric Acid, per lb., ...		0·02
1	Algemesia ,,	,, ,, ,, ,, ,,		0·07
1	Valencia, .,	,, ,, ,, ,, ,,		0·01
1	,, ,,	,, ,, ,, ,, ,,		0·02
1	Jaffa (Palestine),	,, ,, ,, ,, ,,		0·33
1	,, ,,	,, ,, ,, ,, ,,		0·17
1	*Valencia (Spain),	,, ,, ,, ,, ,,		0·08
1	* ,, ,,	,, ,, ,, ,, ,,		0·06
1	*Burriana, ,,	,, ,, ,, ,, ,,		0·09
		Washed from rhind.	In peel.	In pulp.
1	,, ,,	0·03	0·34	0·12
1	,, ,,	0·03	0·19	0·13
1	Alcira ,,	—	0·39	0·24

* Note:—The method adopted in the examination of these samples of oranges was by washing the rhinds with a very slightly alkaline solution; consequently the boron compounds detected in the washing are due not to the trace of boron compounds which are natural to oranges, but to the presence of boron compounds caused by treating or spraying the oranges with a solution containing these substances.

Mr. F. W. Harris, City Analyst, in his report states that none of the samples submitted have been found free from boron. The first examinations were made with reference to the surface treatment of the skin, or peel, of the fruit only and not to the pulp, and a small proportion of boron was present in every case. In later examinations the pulp was also examined, and boron compounds, ranging from ·1 to ·2 of a grain per lb. were found. This quantity, it may be observed, is naturally present in citrous fruit, and has no relation whatever to the surface treatment of the fruit. While the evidence indicates that some attempt to preserve the fruit by dipping in boron solution is being adopted, an obvious difficulty arises in any attempt to determine the amount of boron which might be regarded as having been added to the fruit by the process of treatment.

Samples of grape fruit were also submitted and found to contain boron compounds in varying degrees from 0·01 to 0·02 of a grain per lb.

Canned Vegetables.—During the year various consignments of canned peas which arrived at the Port here were found to contain copper sulphate—a compound which is used for the colouring of canned peas and similar vegetables. The parcels were detained in each instance, and the consignees notified. On being informed that the importation of food-stuffs containing colouring matter was a contravention of the Regulations, the consignees made application to be allowed to re-export the consignments. Permission was granted on condition that the consignees submitted a note of the date of shipment, name of ship, and destination of the food-stuffs. This information was duly supplied, and the parcels were identified before and after being reshipped. The Scottish Board of Health were notified as to the arrival of and disposal of the goods.

Cream.—Fairly large consignments of cream arrive from the North of Ireland and Irish Free State Ports. During the period from January to December, 24 samples of cream were obtained and submitted to the City Analyst for examination, who reported that, in no single instance, was the presence of boron preservative detected.

Ham and Bacon.—During the year various consignments of ham and bacon in small lots, usually 2 boxes at a time, and packed in borax arrived at the Port here. In every instance the arrivals of consignments were notified by the consignees and immediately the goods were sold the name of the purchaser was also supplied. The premises of the purchasers were visited and it was noted that, in all cases, the ham and bacon were intended for and would only be used for ships' stores. This being in conformity with the Regulations, no further action was considered necessary. The number of boxes so dealt with was 28 of ham and 26 of bacon.

"Sooty Mould" in Oranges.—Samples of oranges taken from a consignment from Jaffa were found to be affected by the fungus known as "sooty mould." The cases were reconditioned at the dock. The quantity so dealt with amounted to 220 cwts.

ARSENIC IN APPLES.

Of 66 samples of various brands of apples, 27 were reported as containing no arsenic. Of the remaining 39 samples, 23 contained arsenic within the prescribed limit; 4 contained 1-100th of a grain; and 12 contained quantities varying from 1-80th to 1-50th of a grain per lb. 40 of the samples were taken from apples landed here from North American Ports, and 26 were from Australasian and Canadian ports. Of the 26 samples taken from these latter ports, the arsenic found was well within the limit.

It was not considered necessary to condemn any of the fruit, and no instance occurred in which sickness could be attributed to its consumption.

FOOD-STUFFS EXAMINED.

During the year food-stuffs were sampled and submitted to the City Analyst, who reported as follows

Article.	Samples Reported.		Notes on Defective Samples.
	Fit for Human Consumption.	Unfit for Human Consumption or not in conformity with Regulations.	
Almonds,	—	1	Damaged by "sweat." 1 cwt. condemned.
Apples,	54	12	11 contained Arsenic, varying from $\frac{1}{80}$ to $\frac{1}{50}$ of a grain per lb. 1 damaged by river water.
Apricot Pulp,	—	1	Burst and blown. 2½ cwts. condemned.
Baking Powder,	4	—	
Blackberries,	1	—	
Butter,	29	—	
Butter Substitute,	1	—	
Buttermilk,	—	—	
Cereals (Grape Nuts, Force, &c.),	3	—	
Coffee Substitute,	1	—	
Cheese,	3	—	
Cherries (in brine),	1	—	
Confectionery,	10	1	Damaged by "sweat" and excessive heat. 114 lbs. condemned.
Cream,	24	—	
Cream of Tartar,	12	—	
Egg Yolk (liquid),	18	—	
Egg Albumen,	3	—	
Egg Whole (liquid),	2	—	
Fats (various),	36	16	Rancid and decomposing, containing an excess of free fatty acids and in some cases also a denaturent. 2,891 cwts. condemned.
Fish (canned, &c.),	8	—	
Flour (various),	4	—	
Fruits (dried),	48	5	2 damaged by mould and sea-water. 3 infested with grubs and moths and flour beetle. 60 cwts. condemned.
Fruits (canned),	51	6	Burst and blown. Containing from 3·19 to 4·03 grains of metallic tin per lb. 147 cwts. condemned and removed to Destructor.
Grape Fruit,	—	1	Contained Boron preservative.
Grapes,	1	—	

Article.	Samples Reported. Fit for Human Consumption.	Samples Reported. Unfit for Human Consumption or not in conformity with Regulations.	Notes on Defective Samples.
Gelatine (edible), ...	1	—	
Glucose, ...	3	—	
Grain (Wheat, Maize, &c.), ...	3	1	Damaged by fire, smoke and river water. 480 cwts. released for poultry and pig feeding.
Ginger (dried), ...	1	1	Contaminated with river water.
Ham, ...	3	2	Contained boron preservative.
Honey, ...	1	—	
Jam, ...	2	—	
Lard, ...	12	3	Rancid and decomposing, containing an excess of free fatty acids. 3,322 cwts. condemned.
Macaroni, ...	1	—	
Margarine, ...	1	—	
Meats (canned, &c.),	13	1	Decomposition. 117 lbs. condemned.
Milk (canned), ...	5	—	
Milk (dried), ...	1	—	
Molasses, ...	2	—	
Oatmeal, ...	1	—	
Oils (various), ...	24	—	
Oranges, ...	—	2	Contained boron preservative and tannic acid. 220 cwts. condemned.
Onions, ...	—	3	Salved cargo. Damaged by sea and bilge water. 820 cwts. condemned and removed to Destructor.
Pork and Beans, ...	9	—	
Pears, ...	1	—	
Sauces, ...	7	—	
Sugar, ...	—	2	1 contaminated with urine. 1 damaged by "sweat." 2 cwts. condemned.
Soups, ...	8	—	
Syrup, ...	1	—	
Tartaric Acid, ...	3	—	
Tomatoes (canned),	9	1	Burst and blown. 120 lbs. condemned.
Treacle, ...	1	—	
Vegetables (peas, &c.),	11	4	All contained Copper Sulphate. 101 cwts. condemned.
Water, ...	1	1	River water, taken from ship's hold.

The following statement compiled from information supplied by the Corporation Veterinary Surgeon indicates the work done under the Foreign Meat Regulations:—

FOREIGN MEAT REGULATIONS.

Beef.	1926	1927	1928
Quarters,	21,321	4,485	10,215
Bags,	192,062	152,793	145,490
Rumps (tierces),	1,403	892	504
Mess (barrels),	537	352	125
,, (boxes),	—	4,742	—
,, (crops),	—	—	—
Boneless (boxes),	30,214	—	—
Tierces,	327	190	152
Casings (tierces),	24	—	—
Fat,	700	—	—
Ox.			
Livers (boxes),	241	125	—
Kidneys (boxes),	38	—	—
Skirts, ,,	—	—	—
Cheeks, ,,	—	140	—
Sweetbreads (boxes),	24	—	—
Tripe (boxes),	6,155	1,999	5,531
Hearts, tails, &c. (bags),	49	10	—
Tongues (boxes),	697	100	—
,, (bags),	—	268	—
,, (calf) (bags),	—	50	—
Veal.			
Carcases,	—	—	7
Sides,	14	—	—
Bags,	36	31	591
Boxes,	2,120	429	—
Mutton.			
Carcases,	31,366	45,122	32,794
Cuts (bags),	6	—	—
Casings,	210	—	—
Pork.			
Mess (barrels),	570	500	360
,, (boxes),	—	—	23
,, (tierces),	—	—	—
Tongues, &c. (bags or boxes),	655	—	—
Ham (tierces),	220	110	50
,, (boxes),	10,919	7,874	11,207
,, (bags),	60	—	—
Loins (boxes),	8,933	5,023	5,352
Forward,	308,246	225,235	212,401

	1926	1927	1928
Forward, ...	308,246	225,235	212,401
PORK (*continued*)—			
Carcases, ...	12,941	15,132	11,056
Bacon (tierces), ...	5	—	—
„ (bales), ...	1,131	1,630	668
Shoulders (boxes), ...	742	843	—
Kidneys (boxes), ...	13	—	—
Casings (various) (casks),	—	197	132
FISH, FOWLS, &c.			
Salmon, ...	—	—	—
Fowls, ...	—	—	—
Others, ...	—	—	—
Total Packages, ...	323,078	243,037	224,257
Destroyed—			
Beef (bags), ...	31	9	327
Calf Tongues (lbs.), ...	—	154	—
Beef (quarters), ...	—	—	5
Pork (carcases), ...	—	—	9

EXPENDITURE AND REVENUE FOR THE YEARS ENDING 31ST MAY.

	1927	1928	1929
Expenditure.	£	£	*
Boarding Station, Greenock, ...	1,419	2,042	—
Glasgow Harbour, ...	3,865	4,539	—
General and Administrative, ...	1,743	1,599	—
Medical Inspection under Aliens Order,	357	404	—
Total, ...	7,385	8,584	—
Revenue.			
From other Authorities, Government Grant, &c., ...	4,592	5,269	—
Glasgow Expenditure, ...	2,793	3,315	—

* Figures not yet available.

SECTION X.

HOUSING.

In Appendix Table III the linings for new houses granted by the Dean of Guild Court are given from year to year. The number granted for the year ending 31st August, 6,885, is the highest for more than half a century. It comprised 132 houses of two apartments, 4,184 of three apartments (*i.e.*, 60 per cent. of the total), and 2,238 of four apartments. This is apart from the considerable house building which has taken place in recent years beyond the City boundary for which no figures are available. These operations, combined with slum clearance and rehousing, are causing a quite decided movement and redistribution of the population which cannot fail to be salutary.

In the annual reports of the previous three years, reference has been made to overcrowding in the smaller houses of the City, and the results of various inquiries have been given. As regards the "ticketed" houses under sanitary supervision, the proportion found overcrowded has not materially increased for the past two or three years, and for the year under review this proportion is 13·8 per cent. In certain areas there has been a slight tendency to diminution of overcrowding. The custom of sub-letting a room, mostly in a two-apartment house, which was an increasing feature of recent years—the result of house shortage and unemployment—is still very prevalent, but so far as observation shows it may be regarded as stationary in amount. This aspect of overcrowding is confined, although not altogether, to the poorer classes of the community. The precise magnitude of this unobtrusive form of overcrowding is not known, but the Sanitary Inspector for the Central Division reports that there are 1,001 houses in his area containing two or more families.

Undoubted evidence exists that, although the housing operations are now affording a definite measure of relief, there is still a large volume of overcrowding, due to the occupancy of small houses by large families. The Sanitary Inspector of the Northern Division has inquired into overcrowding in three small groups of the population. He finds that among 546 scheduled uninhabitable houses, mostly of one apartment, 45 per cent. are overcrowded above the standard of three persons per room; that among 620 houses of better type occupied chiefly by the labouring classes, 19 per cent. are overcrowded (26 per cent. of the single apartment and 18 per cent. of the two-apartment houses); and that among 464 houses occupied chiefly by artisan classes, almost all of two apartments, the overcrowding was only 2 per cent. Studies of small groups of this kind must be accepted with reserve, but these samples show where the incidence of gross overcrowding chiefly occurs. The continued relief of this situation depends upon the provision of houses within the competence of small wage earners to afford, and is the most important housing problem of the moment. It is now the policy of the Corporation to concentrate upon the provision of moderately-rented houses for this group of the population, and to devote them to relief of overcrowding by selection of tenants on the basis of size of family and income, a policy which will bring housing into very direct relationship with public health. Further reference is made to this aspect of housing in the report on the "intermediate" house.

In the text which follows there are included reports which have been made during the year on certain aspects of housing, with special reference to slum clearance and rehousing and the "intermediate" or cheaper dwelling now being provided. Under the former heading the report on slum clearances of 19th November gives a comprehensive review of the transference of tenants from uninhabitable to new houses, and indicates the various letting transactions which have taken place in the several schemes. A report by the Director of Housing is included, as it shows the general situation of the schemes and the houses built and to be built under current schemes.

SLUM CLEARANCE AND REHOUSING SCHEMES.

The following tables give in summary form and in detail for each scheme the general position as at the close of the year :—

No new representation was made during the year, but a further scheme is in course of preparation. The following summary shows the position as at the end of 1928 of the various schemes already represented and approved :—

	Number of Houses.			
	Demolished.	Closed.	Still Occupied.	Total Houses in Scheme.
Parliamentary Road Scheme,	121	—	—	121
1923 Scheme, ...	1,780	78	—	1,858
1926 Scheme, ...	817	177	12	1,006
1927 Scheme, ...	56	64	899	1,019
1928 Scheme, ...	39	8	1,059	1,106
Totals, ...	2,813	327	1,970	5,110

(*a*) Glasgow (Cowcaddens, &c.) Improvement Scheme, 1923.—This scheme is almost completed; all the families have been rehoused, and only 78 closed houses await demolition.

	1 apt.	2 apts.	3 apts.	Total
Houses closed or unoccupied at commencement of Scheme—				
Number demolished prior to 31st Dec., 1926, ...	40	16	—	56
Houses in occupation at commencement of Scheme—				
Number closed and demolished prior to 31st Dec., 1927, ...	762	805	40	1,607
Number closed prior to 31st Dec., 1927, and demolished during 1928, ...	68	—	—	68
Number closed and demolished during 1928, ...	47	2	—	49
	877	807	40	1,724
Number closed prior to 31st Dec., 1927, and not demolished at 31st Dec., 1928, ...	29	4	3	36
Number closed during 1928, and not demolished at 31st Dec., 1928, ...	37	5	—	42
	66	9	3	78
Number still in occupation at 31st Dec., 1928, ...	—	—	—	—
Total Houses in Scheme, ...	983	832	43	1,858

Number of Families—

Transferred to Rehousing Schemes—	
Prior to 31st Dec., 1927,	1,444
During 1928,	72
"Substituted" and transferred to Re-housing Schemes—	
Prior to 31st Dec., 1927,	139
During 1928,	13
Removed voluntarily or on account of non-payment of rent, &c.—	
Prior to 31st Dec., 1927,	171
During 1928,	6
Still to be provided for at 31st Dec., 1928,	—
Total in Scheme,	1,845

(*b*) THE GLASGOW IMPROVEMENT SCHEME, 1926.—Considerable progress was made with this scheme, and at the end of the year only 12 families had still to be re-housed.

	1 apt.	2 apts.	3 apts.	4 apts.	Total.
Houses closed or unoccupied at commencement of Scheme—					
Number demolished prior to 31st Dec., 1927,	—	1	—	—	1
Number demolished during 1928,	1	—	—	—	1
	1	1	—	—	2
Houses in occupation at commencement of Scheme—					
Number closed and demolished prior to 31st Dec., 1927,	98	165	19	1	283
Number closed prior to 31st Dec., 1927, and demolished during 1928,	98	64	8	—	170
Number closed and demolished during 1928,	172	176	12	2	362
	368	405	39	3	815
Number closed prior to 31st Dec., 1927, and not demolished at 31st Dec., 1928,	—	—	—	—	—
Number closed during 1928 and not demolished at 31st Dec., 1928,	82	83	12	–	177
	82	83	12	—	177
Number still in occupation at 31st Dec., 1928,	11	1	—	—	12
Total Houses in Scheme,	462	490	51	3	1,006

Number of Families—

Transferred to Rehousing Schemes—	
Prior to 31st Dec., 1927,	355
During 1928,	398
"Substituted" and transferred to Rehousing Schemes—	
Prior to 31st Dec., 1927,	68
During 1928,	84
Removed voluntarily or on account of non-payment of rent, &c.—	
Prior to 31st Dec., 1927,	60
During 1928,	79
Still to be provided for at 31st Dec., 1928,	12
Total in Scheme,	1,056

(c) THE GLASGOW IMPROVEMENT SCHEME, 1927.—This scheme was formally approved by the Board of Health on 22nd December, 1927, and the following table shows the number of houses in the scheme, and the position at the end of the year :—

	1 apt.	2 apts.	3 apts.	4 apts.	Total.
Number of Houses in Approved Scheme—					
Central Division, ...	55	74	7	—	136
Northern ,, ...	32	33	1	—	66
Eastern ,, ...	376	330	26	1	733
South-Western Division, ...	22	60	1	1	84
	485	497	35	2	1,019
Houses closed or unoccupied at commencement of Scheme—					
Number still to be demolished at 31st Dec., 1928,	2	3	—	—	5
Houses in occupation at commencement of Scheme—					
Number closed prior to 31st Dec., 1927, and demolished during 1928, ...	1	1	—	—	2
Number closed and demolished during 1928, ...	22	31	1	—	54
	23	32	1	—	56
Number closed during 1928, and not demolished at 31st Dec., 1928, ...	32	27	—	—	59
Number still in occupation at 31st Dec., 1928,	428	435	34	2	899
Total Houses in Scheme, ...	485	497	35	2	1,019

Number of Families—

Transferred to Rehousing Schemes—	
Prior to 31st Dec., 1927, ...	2
During 1928, ...	87
" Substituted " and Transferred to Rehousing Schemes—	
During 1928, ...	20
Removed voluntarily or on account of non-payment of rent, &c.—	
During 1928, ...	8
Still to be provided for at 31st Dec., 1928, ...	974
	1,091

(d) THE GLASGOW IMPROVEMENT SCHEME, 1928.—The formal approval of the Board of Health to this scheme was given on 16th November, 1928. The number of houses in the scheme is as follows :—

	1 apt.	2 apts.	3 apts.	4 apts.	5 apts.	6 apts.	Total.
Central Division, ...	37	87	4	1	—	—	129
Northern ,, ...	381	163	9	2	1	—	556
Eastern ,, ...	220	180	19	1	—	1	421
	638	430	32	4	1	1	1,106

Forty families had been rehoused before the end of the year.

REPORTS BY MEDICAL OFFICER OF HEALTH AND DIRECTOR OF HOUSING ON PROGRESS OF SLUM CLEARANCE SCHEMES.

Sanitary Chambers,
Glasgow, 19th November, 1928.

The Town-Clerk,
City Chambers,
Glasgow.

Dear Sir,

Slum Clearances.

As instructed on 27th October by the Sub-Committee on Insanitary Areas (see Print No. 27, page 2671), I submit the following report with reference to the progress of slum clearance schemes and as to the future policy in connection therewith.

The Corporation have promoted five such schemes, embracing 5,110 houses, as follows :—

	Demolished or Closed as at 22/10/28.	Still Occupied as at 22/10 28.	Total Houses in Scheme at 22/10/28.
Parliamentary Road Scheme, ...	121	—	121
1923 Scheme, ...	1,816	42	1,858
1926 Scheme, ...	863	143	1,006
1927 Scheme, ...	64	955	1,019
1928 Scheme, ...	45	1,061	1,106
Totals, ...	2,909	2,201	5,110

This table shows that in the various clearance schemes there are still in occupation 2,201 houses which contain 2,316 families awaiting re-accommodation. The Director of Housing is reporting to you separately in regard to the progress and prospects of rehousing schemes, and his information may be summarised as follows :—

Houses Completed and Occupied, ...	3,032
Houses in course of Erection, ...	1,046
Houses for which Schedules issued, ...	156
Houses for which Ground has been, or is being, acquired, ...	1,116
	5,350
Add—	
Houses to be Erected on Sites Cleared under Clearance Schemes,	402
Total, ...	5,752

The Director hopes to have practically all of these houses completed by May, 1930.

This opportunity has been taken to review the letting of houses in the various rehousing schemes and two statements are attached, containing (1) an analysis by Mr. Ewan of the letting transactions in rehousing schemes; and (2) a note on Mr. Ewan's statement. Both of these documents are important, because they show the use to which the houses in rehousing schemes are being put and the effect of this on future policy. For instance, past experience shows that the 3,169 lets and re-lets of houses to date include 310 families housed by the process of substitution, 231 from dangerous buildings, and 238 from houses closed under Part I of the Housing Act, demolished for street widening or for other purposes (most of which were, in any case, uninhabitable). These encroachments on the slum clearance schemes proper, which may be regarded as inevitable, and which are likely to continue as a permanent feature, amount to about 25 per cent. of the total new houses provided. On the other hand, this proportion of these special lets (25 per cent.) is approximately the same as the proportion of new houses provided for, but not taken advantage of by dispossesed families.

While, therefore, the number of houses built and occupied closely approximates to the number of slum houses actually closed, letting has not, so far, been in excess of the number of new houses covered by the estimates in connection with each clearance scheme. Obviously, of course, were the 25 per cent. of surplus houses rigidly retained for families evacuated from scheduled houses, the closure of such houses would be considerably accelerated, while the ultimate total of new houses would be similarly reduced. The completion of the houses now in hand by the Housing Department will thus, on the basis of past experience, and provided that letting procedure remains the same, probably just meet the existing commitments in respect of current clearance schemes.

Future procedure should concern itself with three aspects of the problem, viz. :—

(*a*) Individual houses or groups of houses may be proceeded against by Closing Order under Part I of the Housing (Scotland) Act. There is a very considerable number of uninhabitable houses in the City amenable to this procedure. Only the most urgent have been so dealt with in recent years. I am afraid that for some time to come the closure of houses must entail the provision of alternative accommodation for those dispossessed, although this is not required under the Act.

(*b*) Many areas await the promotion of slum clearance schemes as such, under Part II of the Act.

(*c*) There are areas which should properly be approached from a more comprehensive standpoint, involving a measure of town planning. An area of this nature has been selected in Calton, and a considerable amount of survey work almost completed under the instructions of the Sub-Committee.

The number of uninhabitable houses in the City which have not yet been dealt with amounts to several thousands, and I shall be glad if the committee will consider the various aspects of the problem as stated above. I would recommend that a further scheme be now proceeded with, to embrace 1,500 houses, 1,000 under a slum clearance and rehousing scheme under Part II, and 500 in respect of representations under Part I of the Housing Act, and that the Calton Scheme be meantime postponed.

Yours truly,

A. S. M. MACGREGOR.

Statement by General Manager, City Improvements Department, *re* Letting of Houses in Rehousing Schemes.

Total number of Families in Schemes,		5,224
Number of families still in occupation,	2,291	
Number of families finding accommodation themselves or rehoused by former factor,	233	2,524
Total number of families from Scheduled Properties rehoused,		2,700
Number of Houses Let as at 30th September, 1928,		2,941
Add number of houses relet in respect of removals or evictions,		228
Total number of lets and relets,		3,169
Number of Families from Scheduled Properties—		
Transferred to rehousing schemes,	2,390	
"Substitution" cases,	310	
		2,700
Number of Families outwith Scheduled Properties—		
Families transferred from properties represented under Part I of Housing Act,	76	
"Duplicate" families from Slum Clearance Houses which had been reoccupied by new tenants,	12	
		88
Special Cases authorised by the Committee—		
Families from properties condemned as dangerous by the Dean of Guild,	231	
Clearance of tenants on housing sites,	115	
Clearance of tenants for street improvements,	28	
Relief of overcrowding,	7	
		381
Total number of families rehoused,		3,169

NOTE ON PRECEDING STATEMENT.

Of the 2,941 houses actually occupied, only 81·3 per cent., or, including re-lets, 75·4 per cent., are occupied by the families for whom the accommodation was statutorily provided.

Expressed otherwise, and assuming that the substituted cases as well as others would find accommodation elsewhere, the provision of 1,000 houses is, on the basis of past experience, sufficient to permit the closure of 1,231, or, including re-lets, 1,326 houses.

On the other hand, the committee has, for various reasons, authorised the occupation of houses provided for slum clearance families by families from other properties. Including re-lets, these special cases (including "substitution" cases) amount to 25 per cent. of the total houses available.

On the basis of past experience, therefore, the provision of 1,000 houses will only permit of the reaccommodation of about 750 families from slum clearance houses.

The whole position may be restated thus, in relation to a theoretical slum clearance scheme.

Assuming a scheme to contain families numbering		1,000
of these there will voluntarily find accommodation elsewhere	79	
and "substitution" cases will number	106	
		185
leaving a net number of slum clearance families *actually* transferred of		815
But deduct also the relative proportion which might be accommodated in "re-lets" (7·2 per cent.),		59
Net number of houses required,		756

By taking advantage of re-lets, 756 new houses would be sufficient to rehouse 1,000 families dispossessed.

The balance of the 1,000 houses originally provided for slum clearance families would be taken up thus :—

"Substitution" cases, ...	97
"Closing Order" families, ...	24
Families from dangerous properties, ...	72
Clearance of housing sites and street improvements, ...	45
Others, ...	6
	244

It is an interesting deduction from the foregoing statement that the special cases authorised by the committee have been more or less equal to the proportion not taken up by slum clearance families as increased by re-lets. While the practice of authorising special lets obviously delays the closing of slum houses, it has not so far created such a situation that the number of houses let is in excess of that originally authorised under the slum clearance schemes.

Public Health Department,
Glasgow, 30th October, 1928.

The Town-Clerk,
City Chambers.

20 Trongate,
Glasgow, C.1, 19th November, 1928.

Dear Sir,

Improvement of Insanitary Areas.

Referring to the minute of the Sub-Committee on Insanitary Areas, of date 22nd ultimo (Print No. 27, page 2671), remitting to the Medical Officer of Health and the Director of Housing to report on the progress of slum clearance schemes, and as to the future policy of the Corporation in connection therewith, I have prepared and send you herewith a tabulated statement, which shows that the five improvement schemes for which approval has been received (from the Parliamentary Road Scheme of 1918 to the Scheme of 1928) include a total of 5,110 houses to be demolished; that, so far, 3,032 houses have been completed and occupied as at the 31st October of this year; that 1,046 houses are in course of erection; that schedules have been issued for other 156 houses; and that ground has been or is being acquired for an additional 1,116, making a total of 5,350 houses erected, in course of erection, and for which sites have been or are being acquired; while, in addition, 402 houses are to be erected on sites to be cleared under the various Slum Clearance Orders, which makes a grand total of 5,752 houses.

With regard to the progress of these rehousing schemes, I estimate that, in addition to the 3,032 houses completed as at 31st October, other 540 houses will be completed by May of next year, and 1,778 by May, 1930, making a total of 5,350 houses. The remaining houses on sites to be cleared under the various Orders (viz., 402) cannot be proceeded with until accommodation is found for the tenants in the houses on areas included in the Orders.

While the total of 5,752 houses proposed to be erected is in excess of the total of 5,110 houses to be demolished under the various Slum Clearance Orders, the excess number is not more than is required for families removed from buildings outwith the clearance schemes, which are shown on the statement to already number 469.

It has been shown by the Medical Officer of Health that, owing to certain families in the houses to be demolished finding accommodation elsewhere than in rehousing schemes, and also to the re-letting of certain of the houses provided, the number of new houses required to replace the number of houses demolished apparently need only be to the extent of approximately 75 per cent. of same, and would, therefore leave a margin for dealing with families removed from buildings outwith the improvement schemes.

Yours faithfully,

R. W. HORN.

SCHEMES FOR IMPROVEMENT OF INSANITARY AREAS.

Houses to be demolished under Schemes—	Total Houses.	Closed.	Demolished.	Still Occupied.
Parliamentary Road Scheme	121	121	121	—
1923 Order, ...	1,858	1,816	1,782	42
1926 ,, ...	1,006	863	653	143
1927 ,, ...	1,019	64	56	955
1928 ,, ...	1,106	45	39	1,061
Totals, ...	5,110	2,909	2,651	2,201

Families removed from Buildings outwith Clearance Schemes—	
Dangerous Properties, ...	231
Duplicate Families, ...	12
Clearance of Housing Sites, ...	115
Street Improvements, ...	28
Relief of Overcrowding, ...	7
Closing Orders, ...	76
Total, ...	469

State of Progress on Re-housing Schemes at 31st October, 1928—

Scheme.	No. of Houses.	
Houses Completed.		
Hamiltonhill (1), ...	348	
,, (2), ...	380	
Logan Street (1), ...	102	
,, (2), ...	30	
Yorkhill, ...	84	
Newbank, ...	358	
Whitefield Road, ...	114	
Campbell Street, ...	138	
Scotstoun, ...	96	
Garvald Street, ...	24	
Belvidere, ...	248	
Springfield Road, ...	308	
Duke Street, ...	216	
Govanhill, ...	288	
M'Neil Street, ...	180	
Germiston, ...	118	
		3,032
Houses being built.		
Germiston, ...	374	
Parkhead, ...	96	
Westmuir Street, ...	36	
Burgher Street, ...	12	
Gairbraid Avenue, ...	210	
Haghill, ...	318	
		1,046
Houses in Schemes Scheduled.		
Germiston (Additional),	48	
Saracen Street, ...	108	
		156
Forward, ...		4,234

Scheme.	No. of Houses.	
Forward, ...		4,234
Ground acquired or being acquired.		
Gairbraid Av. (Additional),	156	
M'Nair Street, ...	156	
Quarrybrae Street, ...	336	
Saracen Street (Additional),	204	
Janefield Street, ...	132	
Old Shettleston Road, ...	132	
		1,116
		5,350
Cleared Area—1926 Order.		
Dobbie's Loan, ...	18	
Port-Dundas, ...	6	
Charlotte Street, ...	12	
		36
Cleared Area—1927 Order.		
Gallowgate, ...	12	
Rumford Street, ...	120	
Marlborough Street, ...	18	
		150
Cleared Area—1928 Order.		
Possil Road, ...	36	
Whitelaw Street, ...	150	
Soho Street, ...	18	
Crownpoint Road, ...	12	
		216
Total, ...		5,752

CONDITIONS IN REHOUSING SCHEMES.

The observation and supervision of the transferred tenants has been continued on the lines described in last year's report. Owing to the expansion of the duties involved, a second special supervising nurse was appointed to assist in overtaking the intimate supervision of the less satisfactory tenants. In connection with the descriptions of the results of observation and supervision which follow, it should be pointed out that 80 per cent. of the occupants of the condemned dwellings are, in fact, transferred to new houses. The tenants are not simply rehoused in part, and in part dispersed elsewhere. It is important to make it quite clear that no question of selection enters into the procedure of rehousing. Although it is far from easy to do so, it is useful to set down the general results of rehousing in brief statistical form. An effort has been made to effect this in the following table, which compares the condition of the houses at the beginning of the year or at the date of occupation with that found at the end of the year :—

Condition	Number at Beginning of Year or Beginning of Occupancy	Percentage	Number at End of Year	Percentage	Difference
Clean, ...	2,303	79·6	2,377	82·2	+ 74
Fair +, ...	11	0·4	80	2·8	+ 69
Fair, ...	530	18·3	396	13·7	− 134
Dirty, ...	41	1·4	32	1·1	− 9
Not Stated, ...	7	0·3	7	0·2	—
	2,892	100·0	2,892	100·0	

While throughout the whole of the housing schemes 143 families are in higher categories compared with the conditions prevailing at the commencement of the year or the commencement of the period of occupancy during the year, which may be taken as indicative of a general upward tendency as shown by comparative figures at the end of the period, it does not reveal the whole picture, as the movement is not always upward. An endeavour is made to make this clear in the table which follows. Generally, however, 85 per cent. of the families are included in the two higher categories, compared with 80 per cent. at the commencement.

The following table affords a measure of the downward movement among families as well as the upward movement shown in the preceding table :—

Condition at Beginning	Number	Condition at end of Year				
		Clean	Fair	Fair +	Dirty	Not Stated
Clean, ...	2,303	2,154	22	126	1	—
Fair +, ...	11	3	3	5	—	—
Fair, ...	530	217	48	243	22	—
Dirty, ...	41	3	7	22	9	—
Not Stated, ...	7	—	—	—	—	7
	2,892	2,377	80	396	32	7

Among the 2,303 families classified as clean at the commencement, 149 had fallen into lower categories at the end of the year, while 5 classified as "fair+" had fallen to "fair," and 22 previously classified as "fair" had fallen to "dirty." In 176 families, therefore, there was evidence of backsliding. On the other hand, among families formerly classified "fair+," 3 had risen to "clean"; among those formerly classified "fair," 265 had risen to "fair+" and "clean," the majority being in the latter grade; while among those classified "dirty," 32 had risen to the higher categories, including 3 to the "clean" group.

It has been a general observation that the incorrigible tenant in a sanitary sense has also been unsatisfactory as a rent-payer, so that the solution of the sanitary problem in many of these instances is aided by eviction in consequence of non-payment of rent. As has been stated, throughout the rehousing schemes as a whole approximately 80 per cent. are satisfactory, in so far as cleanliness is concerned. Among tenants evicted or removing for other reasons during the year, the conditions at the beginning and end of the tenancies were as follows:—

EVICTED TENANTS.

	Clean	Fair +	Fair	Dirty	Total
At beginning of year, ...	43	—	57	10	110
At date of removal, ...	37	2	57	14	110
	– 6	+ 2	—	– 4	—

REMOVED FOR OTHER REASONS THAN EVICTION.

At beginning of year, ...	176	—	36	—	212
At date of removal, ...	175	1	35	1	212
	– 1	+ 1	– 1	+ 1	—

In the group of 110 tenants who were evicted for non-payment of rent, the proportion of clean houses was only 39 per cent. Among the other removals the proportion of clean houses at the termination of the tenancy was 83 per cent., or approximately the average of all the housing schemes. While the summary tables given above suggest that the conditions among these two groups were more or less static, this applied only to the second group, and detailed analysis shows a considerable fluctuation in the conditions as regards cleanliness found from time to time in the group evicted.

Overcrowding.—At the end of the year, but excluding the Germiston Scheme, which had just been opened, there were 2,892 houses in occupation in rehousing schemes, 1,843 being of two apartments and 1,049 of three apartments, with a total population of 15,578 persons.

The following table shows the numbers of these houses ocupied by families of various sizes :—

	No. of Houses			No. of Population		
No. of Inmates	2 Apts.	3 Apts.	Total	2 Apts.	3 Apts.	Total
1, ...	28	—	28	28	—	28
2, ...	174	3	177	348	6	354
3, ...	337	36	373	1,011	108	1,119
4, ...	405	76	481	1,620	304	1,924
5, ...	383	135	518	1,915	675	2,590
6, ...	276	213	489	1,656	1,278	2,934
7, ...	145	202	347	1,015	1,414	2,429
8, ...	51	169	220	408	1,352	1.760
9, ...	27	109	136	243	981	1,224
10, ...	10	57	67	100	570	670
11, ...	—	26	26	—	286	286
12, ...	—	17	17	—	204	204
13, ...	—	1	1	--	13	13
14, ...	—	2	2	—	28	28
15, ...	—	1	1	—	15	15
Not stated, ...	7	2	9	—	—	—
Totals, ...	1,843	1,049	2,892	8,344	7,234	15,578
Of which, occupied in excess of three persons per room,	233	104	337	1,766	1,116	2,882
Percentage, ...	12·7	9·9	11·7	21·2	15·4	18·5

On the usual standard of three persons per room, 12·7 per cent. of the two-apartment houses were overcrowded and 9·9 per cent. of the three-apartment, averaging 11·7 per cent. between both. It will be observed from the table, however, that when taken on the basis of population, overcrowding exists among the two-apartment population to the extent of 21·2 per cent. and among the three-apartment population to the extent of 15·4 per cent., or together, 18·5 per cent. Among the two-apartment families, 10 are occupied by no less than 10 persons, or five persons per room; among the three-apartments, this degree of overcrowding occurs in only one instance, in the Polmadie Scheme, where the total number of occupants is 15.

Nature of Occupancy.—Again, taking the 2,892 houses dealt with in the preceding summaries, the compositions of the households occupying same at 31st December, 1928, were found to be as follows :—

	2 apts.	3 apts.	Total.
Households with no lodgers, ...	1,495	827	2,322
Households with relative lodgers, ...	209	164	373
Households with non-relative lodgers, ...	130	52	182
Households with both relative and non-relative lodgers,	2	4	6
Not stated, ...	7	2	9
	1,843	1,049	2.892

Of the 1,843 two-apartment houses, 341, or 18 per cent., and of 1,049 three-apartment houses, 220, or 21 per cent., include in the households persons other than members of the actual occupying families. This, of course, is a matter to be dealt with rather by the department responsible for the letting of the houses than the Public Health Department, but while the committee has indicated that near relatives might not be objected to, the taking in of non-relative lodgers is a distinct contravention of the rules of letting. From the public health point of view the matter becomes important when the inclusion of lodgers, whether relative or non-relative, results in overcrowding, while multiple family occupancies recreate in the new schemes all the difficulties of the use by more than one family of sanitary and domestic conveniences provided for a single household.

In the following table the extent to which overcrowding is associated with the inclusion of lodgers is shown :—

	2 apts.	3 apts.	Total.
Not overcrowded on basis of three persons per room, but including—			
Households with no lodgers, ...	1,360	764	2,124
Households with relative lodgers, ...	151	140	291
Households with non-relative lodgers, ...	90	37	127
Households with both relative and non-relative lodgers,	2	2	4
	1,603	943	2,546
Overcrowded on the basis of three persons per room, and including—			
Households with no lodgers, ...	135	63	198
Households with relative lodgers, ...	58	24	82
Households with non-relative lodgers, ...	40	15	55
Households with both relative and non-relative lodgers.	0	2	2
	233	104	337
Not stated, ...	7	2	9
	1,843	1,049	2,892

Among the two-apartment houses, 135, and among the three-apartment houses 63, are overcrowded although no lodgers are included, while in 98 two-apartment houses and 41 three--apartment houses the overcrowding is mainly attributable to the presence of lodgers, although in a few instances the number of the family itself is in excess of three per room, and the conditions have been further aggravated by the inclusion of lodgers.

The following summary further shows the numbers of relative and non-relative lodgers in households, distinguishing between relative and non-relative lodgers :—

REHOUSING SCHEMES—TABLE SHOWING NUMBERS OF HOUSEHOLDS AND NUMBERS OF LODGERS THEREIN.

Number of Lodgers.	Relative Lodgers.		Non-Relative Lodgers.	
	Overcrowded.	Not Overcrowded.	Overcrowded.	Not Overcrowded.
1	28	166	6	57
2	18	64	13	37
3	14	32	15	27
4	8	20	14	7
5	7	5	5	3
6	4	2	4	...
7	2	2	...	...
8	1	...	...	...
	82	291	57	131

	561
Not stated, ...	9
	570

Overcrowding may arise either from adding one or more lodgers to a family already up to or in excess of the standard of three persons per room, or by adding an excessive number of lodgers to an occupying family whose own numbers may be within the standard. For instance, among two-apartment houses there are 93 households with 7 members, 28 with 8 members, 11 with 9 members, and 3 with 10 members, in which there are no lodgers. There are, however, 52 households with 7 persons, where the excess is wholly due to lodgers—12 having 1 lodger; 16, 2 lodgers; 12, 3 lodgers; 5, 4 lodgers; 6, 5 lodgers; and 1, 6 lodgers. In the last-mentioned case the whole of the lodgers are non-relative. Extreme instances among the two-apartment houses are 2 households of 8 persons, each of which include 6 relative lodgers, while another consists of the householder and 7 relative lodgers. In another household of 9 inmates, the total is made up of 8 lodgers and the householder, while in still another instance there are 6 non-relative lodgers as against 3 members of the family. The extreme instance among two-apartment houses is the household which consists of 10 persons, of which 6 are non-relative lodgers.

Similar conditions prevail among three-apartment houses, where families of 10 and 12 persons each include 6 relative lodgers, while 3 families of 12 persons have each 5 non-relative lodgers. One household of 14 persons is divided equally among members of the family and relative lodgers, while in one with 15 persons, 6 are non-relative lodgers.

Since the close of the year substantial improvement has been effected in the conditions recorded above, so that there are now considerably fewer houses overcrowded by reason of the presence of lodgers. In co-operation with the caretakers at the schemes, pressure was brought to bear on the tenants to have the lodgers removed. When these efforts failed, the families were reported to the Manager of the City Improvements Department, and the threat of eviction for breach of the conditions of let was usually effective. In only one case was it necessary to resort to legal proceedings, but the family removed before the action came before the Court. The taking in of lodgers may be ascribed as partly due to poverty, although in some instances a desire to make a profit was apparent, and partly because the families are not able to appreciate a standard of housing which aims at something better than one family for each room.

School Children. — Observations were made throughout the year with a view to ascertaining to what extent altered environment reflected itself in the health and habits of children, more especially among those attending school. Vital statistics are yet too meagre to provide any definite data on which to base conclusions, but so far as they go they seem to indicate a measure of improvement, more especially as regards respiratory diseases.

Inquiries were also made among the schools adjoining the rehousing schemes, and generally it was found that among the older school children, and particularly girls, the association with other children had tended to improvement, both as regards cleanliness and clothing and general behaviour. Among the younger school children the improvement was not so apparent. A degree of antagonism which at first existed between the two groups is gradually being overcome, and in time is likely to disappear altogether. Headmasters and teachers have been closely interested in the social problem thus presented, and not a little of the improvement which has been recorded may be ascribed to their efforts to overcome such difficulties as at first presented themselves.

REPORT BY THE SUPERVISING NURSE INSPECTOR.

This is the first completed official year since I began the special supervision of the less satisfactory class of tenants in the slum clearance schemes of the City in August, 1927.

For the purpose of supervision, the houses in the various areas are classed as "clean," "fair," and "dirty," according to the condition of cleanliness observed by the different occupiers.

My special duty is the supervision of all "fair" and "dirty" houses in the Eastern and Northern Districts of the City, whilst the other Lady Inspectors of the Health Department look after the clean houses (except in the Newbank Scheme, where all houses are supervised by me), and transfer to me any of the tenants they find lapsing from the "clean" standard. I in turn transfer back those tenants who, after a longer or shorter period of supervision, are found to have so far improved as to require fewer visits. This transferring goes on intermittently throughout the year.

The following table gives a general idea of the result of my work since August, 1927 :—

Schemes	Number of Houses Occupied	Number of "Fair" and "Dirty" Houses in August, 1927	Number of "Fair" and "Dirty" Houses in December, 1928
Newbank, ...	358	117	87
Belvidere, ...	248	64	78
Springfield Road,... ...	308	92	72
Garvald Street, ...	24	14	9
Hamiltonhill, ...	728	312	140
Campbell Street, ...	138	36	22

This table shows a marked all-round improvement, except in the case of Belvidere, where there is an increase of unsatisfactory tenants. Here the increase is to be explained by the fact that Belvidere Scheme was more recently occupied than the others, and the concentrated supervision since I took over the work resulted in many houses which were formerly classed as "clean" being transferred to the lower categories.

In seeking for reasons to explain the different standard of cleanliness amongst these people, the following factors, with many others, must be taken into account. It is noticeable that tenants who came from non-slum areas, that is, from houses that became unsafe for habitation from any cause, or from houses that were demolished to make room for business premises, are as a whole satisfactory, and not only that, but their example acts as an incentive to, and has a favourable influence on, former slum-dwellers who happen to live beside them. On the other hand, with former slum-dwellers who are massed together, much more difficulty is experienced in educating them to a higher standard of cleanliness, and longer periods of supervision are necessary, as can be proved from my observations, particularly in the Springfield Road Scheme, where there are collected a large number of families who came from our worst slum districts, such as Richard Street and Piccadilly Street, Anderston, and Rose Street, South-Side. My experience here is contrary to suggestions which I noticed in the public press and elsewhere, in which it was proposed to segregate slum-dwellers into colonies away from the more respectable citizens. Such segregation would, in my opinion, not only brand these poor people as outcasts but also sap any desire for self-improvement.

Again, many things have to be taken into account in judging the standard of cleanliness. For instance, the days of the week on which the houses are visited have to be noted. On Mondays and Tuesdays conditions are usually unsatisfactory, the former because of the week-end relaxation, and the latter because of the early closing of shops, as the people can only afford to bring home sufficient food for one day. Further, when a house is visited early in the forenoon it is not unusual to find even ordinarily clean houses untidy and dusty. The weather conditions also affect the standard. In rainy weather, when children with dirty boots are tramping over uncovered floors, as uncovered the majority of floors are, mothers find it difficult to have white wood.

In all classes of houses, if unexpected visits are paid at a shorter interval than the usual three months in the "clean" groups, or the monthly visit in the unsatisfactory cases, the results are disappointing. After one of these surprise visits to the Belvidere Scheme, 25 houses had to be transferred from "clean" to "fair." In Hamiltonhill an inspection was made within three weeks instead of one month, with the result that five tenants in the "fair" category received written notices for dirty houses. It is also invariably the case that when a tenant, who happens to be out when a visit is made, receives a card to be in on a certain date, the house (even the dirtiest) is found perfectly clean when an intimated visit is made. This only shows that unexpected visits are necessary if a satisfactory degree of cleanliness is to be maintained, and also that in many cases it is not the love for cleanliness, but the fear of consequences that decides the condition of the house.

Income has a great bearing on the condition of the house. I can quote instances of people who, while receiving Parish relief, kept unsatisfactory houses, but once work was obtained a distinct improvement soon took place. It is equally true that there are tenants who, although receiving Parish relief, keep clean houses, but inquiries show that most of this latter class did not come from the worst slum clearance areas. Other instances of what at first sight seemed to be utter laziness explained the plight of some of these people. For example, I found some tenants lying in bed at noon, and their explanation was that they were saving a meal per day by lying later in bed. A common excuse, which I believe to be true, is that there is no money to buy cleansing material until the Parish or the Unemployment money arrives. This continual struggle against poverty undoubtedly disheartens these poor people, and it is a duty to give them every encouragement where they shows signs of willingness and effort to raise their standard.

The greatest improvement is noticeable in the schemes which are longest occupied. This goes to prove that special supervision is having the desired effect. It will, however, take time and patience before permanent satisfactory results are secured.

The following table shows that the longer the occupancy the more satisfactory are the results :—

Schemes	Houses fully Occupied (Year)	Percentage of Unsatisfactory Tenants Year ended December, 1928
Newbank, ...	1925	24 per cent.
Belvidere, ...	1926-27	31 ,,
Springfield Road, ...	1926-27	25 ,,
Lily Street,		45 ,,
Garvald Street, ...	1926 27	38 ,,
Hamiltonhill, ...	1924-25	20 ,,
Campbell Street, ...	1925	17 ,,

Below is a table showing the present percentage of the "clean," "fair," and "dirty" tenants in the various schemes :—

Schemes	Percentage "Clean"	Percentage "Fair"	Percentage "Dirty"
Newbank, ...	76 per cent.	21 per cent.	3 per cent.
Belvidere, ...	69 ,,	24 ,,	7 ,,
Springfield Road, ...	75 ,,	21 ,,	4 ,,
Lily Street, ...	55 ,,	36 ,,	9 ,,
Garvald Street, ...	62 ,,	13 ,,	25 ,,
Duke Street, ...	86 ,,	12 ,,	2 ,,
Hamiltonhill, ...	80 ,,	17 ,,	3 ,,
Campbell Street, ...	84 ,,	13·5 ,,	2·5 ,,

In 1927, individual reports were made on the "dirtiest" tenants in the following schemes. The undernoted table shows how these stand at the year ending 1928 :—

Schemes	No. of "Dirty" Tenants in 1927	Since Evicted	Improved to "Clean"	Improved to "Fair"	Still "Dirty"
Newbank, ...	9	2	3	2	2
Springfield Road, ...	6	2	2	—	2
Garvald Street, ...	2	—	—	—	2
Hamiltonhill,...	11	3	5	—	3
Campbell Street, ...	6	3	1	—	2
Totals, ...	34	10	11	2	11

The eleven still "dirty" may be considered as incurable.

Newbank Scheme was the first to be completed and occupied in the East-End of the City. There are in all 358 houses; of these, 271 are "clean," 74 "fair," and 13 "dirty." There is a permanency in the three classes, except when there is a lapse from the "clean" stage. The whole scheme will require a good deal of supervision if the present standard is to be maintained or raised. Seven of the "dirty" group will, I hope, through time be transferred to the higher categories. With the other six mothers, there is a natural tendency to be dirty. Two of them put forward the plea of large and lazy families. One mother is blind, another drinks, and two are unmethodical and lazy. The lodger question gives less trouble here than at Springfield Road, because the caretaker inspires fear by threatening evictions. Taking Newbank as a whole, the results are good, but, considering that during the year 37 were transferred from "clean" to "fair," it shows the necessity of constant supervision, if improvement is to be maintained.

Belvidere Scheme adjoins Newbank. It was completed and occupied by August, 1927. There are 248 houses, comprising 170 "clean," 61 "fair," and 17 "dirty" tenants. Nine of this "dirty" class will, I think, always be unsatisfactory, and are of a type similar to those who, in the earlier schemes, had to be ultimately evicted. Of the 61 "fair," all but twelve have at some time reached the "clean" standard, thus raising hopes of future satisfaction. The block houses are as a whole satisfactory. One street—Dunkeld Street—consists of well-furnished, clean houses. The gardens in the summer have a fine display of flowers. The paths are concreted at the tenants' expense. In all the Eastern district schemes, this street is the ideal one, and makes one hope that their progress will act as a good example. There are comparatively few lodgers in this area. The people appear appreciative, and mothers often remark how their children have improved in health since coming to these surroundings.

Duke Street Scheme was gradually occupied during the latter half of 1928. There are 216 houses. Of these, 25 are "fair" and 5 "dirty." No excuse can be offered for four of this "dirty" group, hence weekly visits will for some time be necessary. To judge from outside, the houses look clean and tidy, with windows curtained and well kept—a striking contrast to the conditions under which the tenants formerly lived. As a whole, the people are responding very favourably to their new surroundings.

Garvald Street Scheme consists of 24 houses. Fifteen are "clean," six "fair," and three "dirty." For its size, it is less satisfactory than most of the other schemes. Even the houses classed as "clean" are of a lower standard than in the other areas. Less attention is paid to ventilation; the stairs and stair windows (if any) are frequently dirty. Of the 24 tenants, 21 have been or are in arrears of rent, and the constant threat of eviction may in part explain their indifference.

Springfield Road Scheme is the least satisfactory of all the schemes. As regards cleanliness, it may be divided into two, *i.e.*, Lily Street, as the worse, and the remaining houses. Lily Street comprises 78 houses (66 of three apartments and 12 of two apartments). Part of the trouble is due to former bad conditions, under which the tenants lived in their previous surroundings, and also the present sub-letting of the houses. This street is hemmed in and cheerless. There are no open spaces or grass to be seen. No attempt is made to cultivate the plots, the closes are marked with balls and chalk, and in many cases the staircase windows are broken. Yet, *en masse*, there are only five dirty tenants, and even these houses are at times clean. The trouble is confined to one side of Lily Street, consisting of 48 houses; 29 of these are unsatisfactory, and ten of the tenants came from Richard Street. Seventeen have at various times had lodgers, and six have or had both rooms let, while the tenant and his family live in the kitchen. This means a return to the single-end mode of living. In only one case can a plea of too many apartments be put forward as an excuse for letting. The caretaker complains of the difficulty he has in dealing with lodgers, because as soon as they are put out of one house they merely move into another close at hand. The tenants complain that without lodgers they cannot pay the rent. This street will require to be carefully watched, otherwise the tenants will relapse into their former condition of living. The remaining part of this scheme is quite satisfactory. In the block houses the gardens are well tended, and, although some of the houses are poorly furnished, they are kept very clean.

Hamiltonhill Scheme comprises 728 houses. Of this number, 117 are classed as "fair" and 23 as "dirty." The "fair" and "dirty" classes remain almost stationary, in contrast to the newer schemes, where there is a gradual upward movement. It can, however, be said that since special supervision started 133 of the lower categories have been transferred to the "clean" class. 39 left or were evicted, including nine of the dirtiest tenants. It may be pointed out that 12 of this 39 came from Richard Street and 10 from Muse Lane, and no doubt have drifted back to other slums.

Twenty-three "dirty" houses out of a total of 728 gives 3 per cent., which is not too high, but 17 of this number are almost hopeless, as the houses are never found clean except when a warning is given. In only six cases can any excuse be put forward, *i.e.*, three widowers with no women to look after the houses; two invalided women (one blind and the other with only one leg); and one where a girl of 15 years looks after a household of ten people, young and old. This is a district where weekly or surprise visits should be made to the "dirty" class.

Taking this scheme as a whole, it has done fairly well. There are clear signs of hardships and poverty, particularly in Hamiltonhill Road and Bonhill Street. Men and women are poorly clad, the houses are scantily furnished, the stairs and windows are frequently dirty, and only a few of the plots are tended. The children, however, appear to be healthy. The lodger question does not cause much trouble, as the caretakers are interested in the problem, and a warning is sufficient to make the lodgers quit.

Campbell Street Scheme consists of 138 houses, 20 of which are under special supervision, and 3 are classed as "dirty." In one of these three there is no mother; in another are five children under seven years; and, lastly, the mother is delicate and is constantly struggling to make ends meet. Each of the three has at times reached the "clean" standard, but the tendency is to be dirty. The other 17 "fair" tenants are occasionally "clean," but lapses are frequent. Some of the gardens are well kept, stairs are clean, and the walls are less chalked than in other schemes. One gets the impression that through time there will be less need for special supervision.

Bugs.—During 1928 a careful examination for bugs was carried out in all the slum clearance schemes by the Nurse Inspectors, under the guidance of the Divisional Doctors. In the Eastern District, Dr. Gunn supervised and helped by lectures and personal visits to the affected houses.

When this campaign started, there was a tendency on the part of the tenants to hide the presence of bugs, and when these pests were discovered they pleaded ignorance, which in some cases may have been true. They were ignorant of any method of extermination. The history of the bug and its favourite haunts were explained. The tenants were told how to clean beds and pictures, where the bugs frequently lodged. The taking down of the beadings and disinfesting were placed in the hands of the City Improvements Department.

In the various schemes, the following numbers of bug-infested houses were treated successfully :—

SCHEMES.	Number of Bug-infested Houses.	CONDITION OF HOUSE.	
		"Clean."	"Fair."
Newbank,	70	43	27
Belvidere,	36	19	17
Springfield Road,	68	46	22
Garvald Street.	8	4	4
Duke Street,	15	10	5
Hamiltonhill,	37	...	37
Campbell Street,	4	...	4

This table shows that a larger number of the "clean" class than the "fair" class of houses have bugs. The explanation to a great extent is that more of the clean houses have papered rooms, thus providing a suitable breeding ground for bugs, and also the special supervision of the other class tends to detect the trouble before the vermin get a firm hold. In five of the above cases, houses received treatment twice, in one case three times, and in all the other cases one treatment was sufficient.

The presence of bugs in the new houses is mainly due to three causes. (1) The carrying of bug-infested furniture from the old houses—there is now less danger from this source of infection, as all furniture and bedding are cleaned by the Sanitary Authorities before removal takes place. (2) Another source is the buying of second-hand furniture and bedding. In 11 cases it was proved that the bugs were transmitted by these means. The difficulty here is apparent, as second-hand furniture is the cheapest and in many cases the only means of replenishing the houses. (3) Another source is the taking in of lodgers who bring with them bug-infested furniture.

In all houses the rule should be frequent examination of all places where bugs hide, such as pictures, beadings, furniture, and bedding. This rule is now being impressed on the tenants, as well as the salutary effects of cleaning and scrubbing with plain soap and water, which has proved more effective and less expensive than the chemical treatment.

Bugs are now rarely seen, but close watch must be maintained, as many of the new tenants come from badly bug-infested areas, and the remedial measures must be explained to them.

In these pages I have pointed to various causes that affect adversely the attainment of the ideal conditions in the housing schemes. The problems are social and economic. The tenants are mainly from the lower classes of the community, and as such have been brought up in sordid surroundings, and accustomed to constant hardship. They have left the sordid surroundings, but the hardships still continue. The majority are receiving Parish Relief or Unemployment Benefit. In relation to the present cost of living, these reliefs are not enough to maintain even a fair degree of comfort, keeping in mind the burdens that have to be borne. The people all say the rents are too high ; rates, taxes, fuel, and light have to be set aside, so that there is little left for food and clothing, quite apart from luxuries.

The only hope is a big improvement in trade, so that the employable classes can be absorbed. Even then there will remain a residue of helpless and unemployable people who will have to be provided for, but those who do not want to work cannot have the present excuse that they are unable to find any work to do. This work-shy class can then, however, be tackled, because at present it is difficult to differentiate.

Apart from the welfare of the dwellers of the housing schemes, supervision is necessary for the protection of property itself, otherwise we should only be creating new slums almost as fast as the old haunts are being demolished. Even with the best of supervision, it is a difficult task to rouse these people to a proper standard of cleanliness; they have been too long in the abyss. Lapses and relapses will recur, but the main tendency is distinctly upwards.

In conclusion, I should issue a word of warning on supervision. By paying visits at regular or stated intervals, the tenants seem to be more or less prepared, and consequently may have their houses in order. I have, however, discovered that by paying unexpected visits conditions are not so satisfactory. This, of course, means that the tenant may be placed in a lower category, from "clean" to "fair," or from "fair" to "dirty." It is not, however, the category that is important, but the permanent cleanliness of the houses, and I would suggest that the regular visits should be interspersed by unexpected visits. One can then find out those who constantly keep clean houses from those who clean up for the regular expected visit. The shirkers can then be placed in their proper category, and receive more attention and supervision.

CATHERINE MATHESON.

Extracts from Reports on various Rehousing Schemes by the Divisional and Lady Sanitary Inspectors.

Springburn.—The Campbell Street Scheme contains 138 houses, of which 118 are regarded as satisfactory. It was first occupied in April, 1925, and fully occupied in December of that year. On the whole, it is showing quite good results. The surrounding district is a respectable working-class one, and this has tended to improve the standard of the rehoused tenants. In Elmvale Street the houses are all clean and well kept, and in many cases well furnished. The tenants are quite up-to-date with their rents. They also take great pride in their gardens, and have been successful in winning prizes under the "Daily Record" scheme for best-kept gardens under the rehousing schemes. Originally 36 houses were under special supervision. This number has since been reduced to 17. Eight of the original unsatisfactory tenants were evicted, five of whom were unsatisfactory. In 1928, three additional houses were transferred to the special inspector; two of these referred to old couples, who did not seem able to improve their condition, and in the case of the third the mother had died and a relative had come to keep house, but the conditions were unsatisfactory.

Hamiltonhill.—All the houses were visited regularly, and those of them regarded as unsatisfactory had special supervision from the nurse inspector appointed for that duty. The condition in which they are kept cannot be adequately indicated in any tabulated statement, but it may be said that of 718 houses in this scheme 576 are well kept, 24 fall a little short of that condition, while 118, or 16 per cent., are unsatisfactory. Included in the last-mentioned category are houses that, in the matter of cleanliness, are considerably below the desired standard, and also those that are definitely in a dirty, ill-kept condition.

The general sanitary conditions are gradually improving, and there is no doubt that much of the improvement is due to the close supervision given by the visiting inspectors. But there is another factor contributing towards improvement. By a process of gradual elimination by means of evictions, outstanding unsatisfactory tenants have decreased in number since the commencement of the scheme, and last year saw another step in that direction. During the year 53 tenants were evicted or moved away owing rent, and of that number 44 were unsatisfactory from a sanitary point of view. This movement, as stated, has contributed to the raising of the general standard in Hamiltonhill.

There is a type of house which, while it comes under the "clean," category, could quite readily on occasion be condemned as "dirty" by anyone going round to criticise, or, in fact, by any other than those actually doing the work. The principal trouble in this case is poverty. The walls have been washed down with water colour, the wooden floors are bare, and, while the housekeeper cleans regularly, the walls and floors are easily marked and soiled. What furniture there is may not be pleasing to the eye. There is another type of house which, while clean, is overcrowded with old furniture.

There has been trouble with bugs, but this has now been much reduced, owing to the new procedure in force, and many of the tenants have now got rid of these vermin, with the aid of the City Improvements Department. The bulk of the houses are both clean and tidy; many of them are well and tastefully furnished. Some are clean and bare. A number are clean, but not always tidy, and on occasion the clean ones are only fair; sickness is usually the cause.

Germiston.—This scheme, when completed, will include at least 500 houses. The first tenants were rehoused in September, 1928, and up to the end of December 211 had been occupied.

Yorkhill.—This is a small scheme, consisting of 84 houses. The men are mostly seafaring or casual dock workers. The standard of cleanliness in Yorkhill is fairly high; 85 per cent. of the houses are clean, and are as well kept and well regulated as the average two or three apartment house in a working-class tenement. The houses for the most part are painted once and whitewashed twice in a year, some oftener. Some 35 per cent. could do without supervision. The other 50 per cent. of clean houses are also kept in quite good order, but there is usually some little fault, like untidiness or soiled basins or brasses, which prevents them being placed under the "very good" category. The remaining 15 per cent. are "fair." Most of the latter really swing between "fair" and "clean." Sometimes one of these is found in a very untidy and dirty condition, but a verbal warning is usually sufficient to bring it back to its normal condition again. The lapses can usually be explained by drink, absolute carelessness, and sometimes illness.

Yorkhill has also a very good reputation as far as the health of the people is concerned. Except for a few of the older members, who complain of rheumatism or chronic bronchitis, there is comparatively little illness. With the exception of one house, there were no complaints of bugs in the scheme last year.

Personal cleanliness amongst the children and younger adults is of a fairly high standard. When inquiry is made one is usually told the children are bathed twice per week at the very least, and in some houses every day. Certainly the appearance of the bath points to this.

Scotstoun.—Ninety-six houses have been occupied since the end of 1926. Twenty-one of the original tenants have left for various reasons. A few find Scotstoun dull after the bustle and stir of Anderston. As one old man put it—"There was neither a fecht nor a funeral."

In some of the houses there is a tendency to overcrowd with furniture. Fully two-thirds of the houses are clean, and that percentage includes a number very tastefully done up; some distempered and enamelled, and others papered and painted. The remainder need attention to keep them up to a certain standard. The standard varies in most of them throughout the year, ill-health and poverty being the causes, in most cases, of the mothers losing heart and becoming careless of their homes, and encouragement and sympathy are sometimes more useful than firmness.

The people are now fully aware that pictures and furniture as well as bedsteads and bedding can harbour bugs, and they have been well warned against the danger of second-hand articles. In spite of the stories one hears periodically of the bath as a coal receptacle, there has been little abuse of the houses. The people appreciate very much the advantages of scullery, bathroom, and hot-water circulation. At the beginning the bathroom was a novel playground for the children, but the mothers are now wiser, from experience, and mostly keep the bathroom doors closed.

The lack of a small boiler in the kitchenette is felt, especially where young children cannot be left while the mother is at the public wash-house in Whiteinch, without an older child being kept off school. The gas fires in the front rooms are much complained of, as the amount of gas required before the rooms are warmed is more than the people can afford to pay. Most of the garden plots were nicely kept. Some were well stocked, and good taste was shown in the laying out of the flower beds.

Whitefield.—During 1928 house-to-house visitation was carried out at regular periods, with a few exceptions where the tenants are well above high-water mark in keeping their homes clean. The visits made once a month have, for the most part, had very satisfactory results. Many of the tenants are showing a real interest in the keeping of their homes clean. Special attention has been given to ventilation and disposal of food refuse in the houses. The houses raised this year from the category of "fair" to "clean" are nine.

There is an endeavour on the part of those tenants not so fortunately placed as others to rise to level of new environment. Their efforts are often agreeably surprising, but always there is to be borne in mind the very thin line existing between this new phase and inherent habit; in other words, practically regular supervision is necessary. The knowledge that the sanitary inspector is there to help them in this process of uplifting, and will encourage the smallest effort on their part, is a great incentive to accomplish that reform in character we are out for. The fact that the "power of the Law" is embodied in this visitor is well known to them, but they are aware that the same will not be enforced so long as the housewife shows she is trying her best to keep her home and family in a clean and wholesome condition.

Springfield Road.—236 out of a total of 308 houses come under the "clean" category. Of these, 97 out of 114 are block houses. This scheme could almost be divided into two sections—the clean tenants occupying the majority of the block houses and the tenement houses in all the streets but Lily Street. Many of the "clean" houses are kept in a very satisfactory condition, and some of the tenants must spend much time and care in the beautifying of their houses. There are seldom complaints of broken radiants of gas fires, broken plaster, window panes, &c., such as are constantly being noticed in the lower class part of the scheme.

The windows are kept clean and usually open, the blinds are evenly pulled up, and there are curtains or screens at the windows. I have noticed in several cases the uplifting effect a clean and superior type of tenant has on her less particular neighbour. The gardens on the whole are being well cared for, and, besides flowers in the front gardens, vegetables are being grown at the sides and back sometimes with quite good results. In some of the gardens the paths are made of red blaize or concrete to keep dirt from carrying into the houses. In most of these very satisfactory houses there is at least one member of the household working.

The class of tenant occupying the houses in this scheme is very much averse to sleeping in an unheated apartment, and often the whole family sleeps in the living-room, leaving the bedroom and occasionally the two bedrooms empty. On pointing this out, the tenants invariably complain that the rooms are too cold, because of the expense of the gas fires.

Unfortunately, the standard of cleanliness in all the houses is not so high. 21 out of 40 houses transferred from "fair" to "clean" during the year are almost "fair" again, which shows the tendency there is to fall back whenever strict vigilance is relaxed.

Fifty-six of these 236 houses are occupied by more than one family, and in 7 other houses lodgers are suspected. In 35 cases the lodgers are supposed to be related to the tenant. Sixteen of the houses occupied by more than one family are three-apartment houses. Lodgers can often be traced from one house to another throughout the scheme, and it is not the cleanest of the tenants who keep lodgers.

Govanhill. — In this scheme there are 288 houses. The tenants of 263 houses were at the beginning of their tenancy maintaining a high standard of cleanliness, but, by the end of the year, 26 could only be classed as "fairly clean." Of the remaining 25, 24 were originally classed as "fairly clean" only, and one as "dirty." The latter tenant, however, had improved so much by the end of the year that it was possible to raise her to the "fairly clean" class, while 8 of those originally in the fairly clean category have risen to the "clean" standard. Twenty-seven tenants—18 of whom were originally clean and remained in that category; 7 who were originally clean, but had fallen to the "fair" category; and 2 who were only fair originally, but had risen to the "clean" standard—removed from the scheme before the end of the year. These were replaced by 24 "clean" tenants, and 3 tenants who could only be classed as "fair." The classification, therefore, at the end of the year was—"clean," 249; "fair," 39; "dirty," nil. These houses are all-electric. Many of the tenants complain that the electric heaters are too expensive. There is a tendency to crowd the family into one room for sleeping purposes.

M'Neil Street.—There are 180 houses; 160 were originally "clean" and 20 "fair." Five of those originally clean, however, failed to maintain that standard and were transferred to the "fair" category. At the end of the year the classification was as follows—"clean", 154; "fair," 26; "dirty," nil.

Polmadie.—There are in all 132 houses in this scheme. Of the 80 tenants classed as "clean" at the beginning of the year, 6 have fallen to the "fair" category; of the 41 originally classed as "fair," 10 have risen to the "clean" category; and of 11 originally "dirty" tenants, 9 have risen to the "fair" category. During the year, 10 tenants—9 "clean" and 1 "fair"—removed from the scheme and these were replaced by 10 tenants, 9 of whom could be classed as "clean" and 1 as "fair." The classification in this scheme, therefore, is now—"clean," 84; "fair," 46; "dirty," 2. The majority came from the back lands of South Wellington Street and Commercial Road. Some have been unemployed for years and the greater number are on Parish Relief.

It will be observed that, while the large majority of the houses in the Govanhill Scheme, M'Neill Street, and Polmadie, have been consistently kept clean, a number require very constant supervision. Many of the tenants of these latter do reach on occasions the higher standard of cleanliness but they do not appear to be able to maintain it for any length of time, and, consequently, have to be retained in the lower classifications. There is also a difficulty in getting many of the tenants to understand the necessity for cleanliness in their surroundings, and it is only on compulsion that they will take their turn of cleaning the closes and stairs, while it does not appear to occur to them that the staircase window requires regular cleaning. An eyesore to be met with in many of the properties is the chalk-marking and otherwise disfiguring of staircase walls.

Many of the tenants persist in crowding the whole family into one apartment. An excuse made by several is that they cannot afford the cost of heating the rooms by gas or electricity, which is the means of heating provided. It naturally occurs to them then to eke out their income by keeping lodgers. The necessity for open windows has also to be continually impressed upon them, while many have even covered up the special ventilators provided in the rooms heated by electricity and which, in consequence, are without chimneys.

At the M'Neil Street Scheme the back courts have been paved, and they can thus be more easily swept and kept clean and this tends to give the whole scheme a tidier and better appearance. At the other two schemes (Polmadie and Govanhill) where the courts have not been paved, and more especially during wet weather when they get into a very muddy and dirty condition, the general appearance leaves much to be desired.

Report on the Prevention of Bug Infestation of Houses in the Rehousing Schemes.

By Dr. W. C. Gunn.

Since the publication of the preliminary report on bug infestation in the Annual Report for 1927, further progress in the solution of this important problem has been made, and the result of the recent work is reflected in the steadily diminishing incidence of infestation of new houses in the rehousing schemes.

That success depends almost entirely on a complete and practical knowledge of the life history and habits of this insect, further experience confirms and emphasises. Everyone responsible for the care and supervision of the new houses must become familiar with the insect. A considerable part of the report already referred to was occupied by the life history of the bug, and to this may now be added the results of further observations.

In the Journal of Parasitology, Vol. 20, No. 2, July, 1928, there is given an interesting description of the American swallow bug, œciacus vicarius, by L. Emery Myers, of Stanford University, California. This species of bug, which is a near relative of the bed bug, and which resembles the latter very closely, is found in the mud nests of the cliff swallow in California. When denied the blood of swallows it feeds readily on man. A certain number of these bugs pass the winter without food in the cracks of the old nests, emerging from these retreats to feed when the swallows begin to nest in March. They can, therefore, starve for several months. In his article Myers describes an experiment in which he placed fifteen swallow bugs in a bottle with a cotton-wool stopper, leaving them unfed. In four or five weeks thirteen had died, one lived five months, and the last one survived the ordeal for six months. He was also able to keep alive on his own blood young swallow bugs which had been hatched from the eggs of these experimental fifteen for nearly six months, by feeding them once per week. During the breeding season the swallow bug multiplies to such an extent that the nests literally swarm with the insects, and Myers states that it is conceivable that the death of both adult and young swallows which are frequently found in the infested nests may have resulted from the attacks of the insect hordes.

Somewhat similar observations have been made in this Department on the bed bug throughout the past year, with the object of determining its resistance to starvation and other adverse conditions, as this is important in view of the great frequency with which the bug has been found to infest the new houses from old furniture, pictures, bed boards, old mattresses, and other neglected household articles which have lain for considerable periods away from sources of food. A colony of bugs of both sexes were taken from a new house in one of the rehousing schemes and placed in a glass-covered dish, or Petri capsule without food or mositure. Air gained access each time the lid was removed when observations were being made. The female bugs began to deposit eggs soon afterwards, and this continued for two months, and the last of the adults died after remaining in captivity for nearly ten weeks, while the young hatched from the eggs survived for a further three months. There is no evidence that the young moulted or proceeded to their second stage of growth in the absence of food, which is necessary to stimulate development. The characteristic musty odour of the bug remained in the glass dish throughout, showing, as is well known to entomologists, that this it a secretion of the stink glands of the insect, and not consequent on the bug feeding on the juices of decaying wood or plaster, as some suppose. The important feature of the observation of this group of adults and their offspring is the long period of five months survived by the two generations without feeding. It is of interest to remember also that the months of the captivity and starvation are those associated with the greatest activity in reproduction when food is also most necessary. This faculty of being able to resist adverse conditions at once indicates the necessity for constant warfare against an insect which possesses such capacity for lying latent.

Another interesting observation was made on a group of twelve young bugs which had been reared from eggs. A female adult was placed in a small Petri capsule where she deposited thirteen eggs, which hatched during the last week of August, 1928. The nymphs or young bugs fed on blood on 31st August, 1928. They were fed subsequently on 8th November, 1928, 23rd January, 1929, 31st January, 1929, and 22nd March, 1929. The adult female died in the natural course of events in October. None of her brood has yet reached adult size, and the individuals do not show the same rate of growth. On the few occasions upon which they have been fed, they have been observed to fix themselves on to the skin almost immediately, and within a minute each individual fills itself with blood. The action of the pumping muscles can readily be watched through the transparent head of each young insect as it rapidly sucks the blood. While the body fills it becomes glistening and red, elongating markedly and assuming an ovoid form. This voracious feeding may only be the consequence of the starvation period. Starved adults also feed very greedily, and when satiated they can hardly walk. Owing to their greatly augmented girth they could not get into the narrow chinks which shelter them normally. They feed readily in daylight after periods of starvation, and whilst doing so they resent being disturbed.

No irritation is felt at the seat of the puncture made by these small insects, but within twenty-four hours small papules appear, which go on increasing in size for a few days, and remain evident for about ten days. This reaction is probably due to the injection of a secretion of the salivary glands, primarily to prevent clotting of the blood in its passage through the small proboscis, but which later acts as a local irritant, somewhat similar to the action of the salivary toxin of some other blood-sucking insects, but to a lesser degree. In fact, the small lesion resembles a mild protein reaction. Apart from this irritation at the seat of puncture, no systemic effects from the bites have been observed so far, although the cumulative effect of multifarious attacks on young children in bug-infested houses cannot be idly dismissed as negligible. Under such conditions the bed bug should be suspected as detrimental to the health of children, just as its near relative, the swallow bug, is believed to be instrumental in causing the death of the young birds in their nests, as has already been observed.

The characteristic odour of the bug is always present in the glass dish where this young brood have subsisted on human blood alone. Here attention might be directed to the fact that the sole food of the bed bug is blood, preferably human, and not crumbling plaster, decomposing wood, or any other material in the structure of old buildings. These provide the shelter for the insects, and the human inmates the supply of nourishment.

Prevention. — The prevention of the infestation of the new houses in the slum clearance rehousing schemes is the primary object of these studies, and the bug is now taken as the index of the cleanliness of the tenants. Its presence or absence has proved to be a very accurate gauge of cleanliness, and there can now be no doubt that carelessness or inefficient housekeeping is at the root of the trouble when bug infestation occurs. Every opportunity is now being taken to keep members of the Public Health Department alive to any new facts in our knowledge of the bug as they arise, and the results of this policy have proved very satisfactory. Interest has been aroused, and greater intelligence brought to bear on the work of extermination and prevention. For example, the rehousing scheme in Duke Street, which was inspected a week ago, was found to be entirely free from bug infestation. This is a distinct advance, and it demonstrates how much can be done by the persistent and sympathetic supervision of the tenants, to whom the source of the infestation is pointed out, where such has occurred. It must be remembered that it is easy for one who has a knowledge of the life history of the bug to demonstrate its breeding-places in a house, and to prescribe for their destruction. That such advice may demand a change of the habits which have been acquired during a lifetime spent in slumdom must be kept in view. Therefore, it is essential that the work should be approached in a sympathetic and helpful manner. The Nurse Inspectors whose duty it is to supervise these people have met with great success by such methods. The tradesmen who are sent from the City Improvements Department to help in the disinfestation of new houses, where this has unfortunately occurred, are also alive to the difficulties to be faced, and they have carried out their share of the work most commendably.

Some of the tenants were housed from old and very heavily-infested back lands in Soho Street, and the fact that they have remained free from vermin and are keeping their houses very clean is one of the most encouraging results of slum clearance. When a house becomes infested with bugs, this in most cases has been due to the introduction into the new houses of old bed boards from old houses, old pictures, old furniture, and second-hand mattresses bought from hawkers' barrows and salerooms. So frequently has the introduction of these articles been found to defeat the infestation precautions which are carried out in the old houses in the slum areas before the tenants leave for the new houses that a pamphlet is being prepared for issue to tenants about to proceed to new houses. As the procedure necessary in eliminating bugs from the new houses entails very considerable labour and expense, too great emphasis cannot be laid on the absolute necessity for prevention and the comparative ease with which this can be accomplished. Thorough cleanliness is the solution to the problem. Taking refuge from domestic cleaning behind the smell of a disinfectant will never protect people against such an instinctively persistent and prolific pest as the bug.

As an indication of what is required to disinfest a vermin-infested house, the following examples of an unoccupied and an occupied house which have been dealt with in slum clearance rehousing schemes may now be described, although these methods are not considered the final word in such work :—

Inspection of the first house revealed a high degree of infestation of the three apartments and bathroom. The house, which was quite new, had just been vacated by a negligent tenant, who had occupied it for six weeks only. All apartments were literally teeming with fleas, and bugs were breeding behind the picture rails, and occasional lice were seen on the floors. The floors were drenched with diluted "Cyllin," thus temporarily overcoming the hordes of insects and permitting an entrance into the rooms. The rooms and picture rails were also heavily sprayed with a light hydrocarbon insecticide, which was also introduced behind the picture rail and skirting boards with a paint brush. Another type of paraffin insecticide was used in other parts, but it can be definitely stated that these preparations only kill the insects if the latter are thoroughly drenched by them ; in fact, it is necessary to have a direct shot at the bugs with a generous supply of the insecticide before death is assured. The windows, fireplaces, and all other exits of the house were made airtight, and the contents of cylinders of liquefied sulphur dioxide gas released under pressure into each apartment. The main door of the house was then sealed, and the house left in this state of intensive fumigation for twenty-four hours. Next day very numerous dead fleas were found lying on the floors, and here and there also were dead lice. Flea maggots were also found, and a very satisfactory observation was the presence of a considerable number of dead bugs. These had been driven from behind the picture rails and skirting boards. Some bugs, fleas, and flea maggots or larvae still survived, although they had obviously lost much of their wonted vitality. The dead fleas and bugs looked somewhat paler than usual, as if the SO_2 gas had had a bleaching effect upon them.

The deduction to be made from this experiment is that fumigation, added to vigorous cleansing, will clear these houses rapidly of vermin, although it has to be remembered that the house described contained no furniture nor other obstruction to the process. The application of the insecticides mentioned may be taken as quite unnecessary. The moistening of the floors, even if only soap and water were used, probably played an important role in increasing the lethal action of the SO_2 gas.

The walls and ceilings were then treated with limewash and distemper. The picture rails and skirting boards were also removed so that thorough access might be obtained to the bugs, and the eggs still surviving behind these structures. Within a week after this work had been completed the house was occupied by a family who came from a bug-infested house in Soho Street. During the following month, which was September, when bug and flea breeding is usually very active, the house was absolutely free from them and it remains one of the most satisfactory houses in the scheme. The method just described may therefore be accepted as entirely satisfactory.

When the houses are occupied disinfestation is more difficult, but the condition can be treated room by room on similar lines, without having recourse to the expedient of temporary removal of the families from their houses, although if this were possible it would simplify matters very considerably. The following is a note on the procedure adopted in such a house :—

This house of three apartments and kitchenette with eight occupants was found to be heavily infested with bugs. It had been occupied for 4½ years. Pictures, chairs, bedding, bed boards, picture rails, and wallpaper were all involved, and breeding had apparently been allowed to go on undisturbed during the summer and autumn. An opportunity was taken of testing the efficacy of samples of other two insecticides with paraffin or petrol as their basis. Three heavily infested pictures were selected for the test. Both insecticides were found to be very deadly when sprayed directly and in considerable quantity on to the colonies of bugs. However, it was observed that some managed to get clear of the pictures and out of the danger zone. These would have escaped had they been left alone. The picture rails were sprayed forcibly with the insecticides and very soon large numbers of bugs emerged from behind them and rapidly scattered themselves over the walls, and even on to the ceilings. These bugs were not killed and were capable of escaping to other shelters. The effect on eggs was not determined. A wipe with a washing cloth or scrubbing with a brush is a greater certainty, in fact its efficacy is never in doubt whilst insecticides are uncertain. Neither spray, in spite of its undoubted deadly effect on the bugs when applied directly, solves the problem of the infested house, because it cannot possibly reach the protected breeding places behind the skirting boards and picture rails, nor does it afford a remedy for the housewife who leaves her mattresses unturned and uncleansed.

The two rooms were "treated" first. These were sprayed with a dilute solution of cyllin, and when all articles of furniture and the atmosphere were moist with the disinfectant, cylinders of liquefied sulphur dioxide gas were released in these apartments, all exits having been previously sealed to prevent the sulphur gas from escaping into the occupied apartments. The quantity used in each room was at least double that recommended in the directions on the cylinders of liquefied SO_2. These rooms were opened next day. Although there was evidence of considerable destruction of bugs, yet many living insects were found, so that only partial success could be claimed. The living-room was similarly dealt with next day. It was unsealed later on the same day to allow the family to occupy it.

The caretaker of this rehousing scheme had also to instruct his tradesmen to remove the picture rails and skirting boards to complete the destruction of the bugs, which were found still alive behind these structures, even after the drastic attack made upon them. The old mattresses were destroyed, and replaced by the Department, while the wallpaper was stripped from the walls, which were subsequently distempered.

The condition of this house as regards infestation, and the great difficulty experienced in restoring it to a state of cleanliness while the tenants were in possession, raises the question of the necessity for the introduction of some kind of reception-house to which these people and their belongings could be removed while cleansing operations were being carried out in the house, because there is no doubt that disinfestation, if properly conducted, means much discomfort to the occupants. Even after the work has been completed, future freedom from vermin cannot be assured, unless the occupants have learned the lesson that constant cleanliness is their only and best safeguard. All this expenditure of time and material and degeneration of property must be regarded as quite unnecessary. If these items could be expressed in terms of money, the cost of disinfestation—which is, after all, the consequence of carelessness and neglect—would be very considerable. The adverse effect on the health of the inmates of infested houses has also be to added to this.

As a further preventive, some alterations in the structure of the new houses has been suggested to the Housing Department by the Medical Officer of Health, and these are being given a trial in a small rehousing scheme, now nearing completion, in Burgher Street, Parkhead. They are as follows:—A bedding of wood has been introduced into the plaster at the usual level of the picture rail, to come flush with the wall, but not jutting out, as at present. This is to be covered by a narrow distinctive band, probably of distemper. No crevices are possible. There will be fixed into the bedding either short lengths of metal rods at suitable intervals or some form of hooks, upon which pictures may be hung.

Instead of the present wooden skirting board, a cement facing, about the same depth and carried on to the floor, has been substituted. Where the cement meets the floor boards a small bead or fillet of wood has been added to seal the junction. This is of as light material as possible, so that, in the event of its having to be removed, this will be carried out easily and inexpensively.

Public Health Department,
March, 1929.

REPORT ON THE "INTERMEDIATE" HOUSE.

This type of house has been designated "intermediate" because it represents a recent effort to provide houses, chiefly of three apartments, with bathroom, scullery, &c., at a rental more within the competence of the working classes than the great majority of those hitherto erected under the subsidy scheme.

As a result of reports on the continued overcrowding and the prevalence of double occupancy of houses in the City, and of the extreme slowness of the process of decantation, this policy of providing cheaper houses was entered upon. On 6th January of this year the Director of Housing reported that "the 1,230 tenement houses, of which 972 are of three apartments and 258 of four apartments, can be let at rentals of 12s. 6d. and 14s. respectively per week, inclusive of rates." The Corporation decided "to let these houses to families living under crowded conditions, with a maximum income of £4 per week, but with preference to those with smaller incomes."

Interest attaches chiefly to the three-apartment house, because under present conditions in Glasgow a commodious and reasonably cheap house of this size is the most urgent necessity of the time. The source and composition of the families entering into the occupancy of these houses have been watched, and, although the number so far provided is not large, an indication of the utility of this provision has been obtained from two schemes containing 349 "intermediate" houses, as shown in the following table:—

	Size of Houses from which Transferred.					
	1 Apt.	2 Apts.	3 Apts.	4 Apts.	Lodgings.	Total.
Number of Families, ...	77	251	17	1	3	349
Transferred to 3 apartments, ...	70	213	9	1	1	294
Number of persons per room—						
(*a*) Before rehousing, ...	6·0	3·0	1·9	1·7	5·0	3·4
(*b*) After rehousing, ...	2·0	2·0	1·9	2·3	1·7	2·0
Transferred to 4 apartments, ...	7	38	8	...	2	55
Number of persons per room—						
(*a*) Before rehousing, ...	9·3	3·9	2·3	...	8·0	4·0
(*b*) After rehousing, ...	2·3	1·9	1·7	...	2·0	2·0

This table shows that, of the 349 families dealt with, 77 were from single apartments, of whom 70 were transferred to three apartments and 7 to four apartments; 251 were from houses of two aparments, of whom 213 were transferred to three apartments and 38 to four apartments, while of 17 from three-apartment houses, 9 were accommodated in houses of similar size and 8 in houses of four apartments. The remainder represent 1 family transferred from a four to a three-apartment house, while of 3 families in lodgings, 1 was transferred to a three-apartment house and 2 to four-apartment houses.

The resulting improvement in the housing accommodation of these families is further illustrated by comparing the number of persons per room before and after rehousing. Thus, among families transferred from one-apartment houses to three apartments, the average number of persons per room fell from 6·0 to 2·0, and among those transferred to four-apartment houses from 9·3 to 2·3. Among the transfers from two-apartment houses, those to three apartments fell from 3·0 persons per room to 2·0, and to four apartments from 3·9 to 1·9 persons per room.

It will be observed that the most common transference was from a house of two rooms to one of three rooms, and the table reveals a definite upward movement as regards size of house. While the relief of overcrowding among the one-apartment families is apparent, this is not so conspicuous a feature among the other sizes of house.

The next point to consider is the extent to which these families were actually living under overcrowded conditions before they were rehoused. The facts are given in the following summary :—

SIZES OF HOUSES VACATED.

Number of persons in house—	1 Apt.	2 Apts.	3 Apts.	4 Apts.	Lodgings.	Total.
1	...	...	...	...	...	...
2	...	1	...	...	...	1
3	...	1	...	...	...	1
4	1	14	3	...	...	18
5	30	63	2	...	1	96
6	20	68	3	...	1	92
7	13	55	6	1	...	75
8	5	29	2	...	...	36
9	5	12	1	...	...	18
10	1	6	...	...	1	8
11	...	1	...	...	...	1
12	2	1	...	...	...	3
	77	251	17	1	3	349
Number with more than 3 persons in house, ...	77	104	...	...	3	184
Percentage overcrowded, ..	100°/₀	41°/₀	...	...	...	53°/₀

While the greatest number of transfers have been from two-apartments to larger houses, the foregoing analysis does not suggest that the most overcrowded families in this group have been dealt with (although, of course, separation of the sexes has no doubt also been in view), less than one-half (41 per cent.) having more than three persons per room in the houses vacated.

A census of the families occupying the new "intermediate" houses has also been made, and may be contrasted with the occupancy of similar houses as at the last, or 1921, census for the City:—

OCCUPANCY OF "INTERMEDIATE" SCHEMES COMPARED WITH CITY (CENSUS 1921).

	3 Apartments			4 Apartments		
		Percentage			Percentage	
Number of Persons	Intermediate Schemes	Intermediate Schemes	Census 1921	Intermediate Schemes	Intermediate Schemes	Census 1921
1	—	—	3·1	—	—	3·7
2	1	·3	12·8	—	—	14·5
3	—	—	17·4	—	—	19·0
4	17	5·8	18·2	2	3·6	19·2
5	90	30·6	15·7	5	9·1	15·2
6	85	28·9	12·2	8	14·5	10·2
7	65	22·1	8·4	10	18·2	7·5
8	28	9·5	5·6	8	14·5	4·6
9	7	2·4	3·2	11	20·0	2·9
10	1	·3	1·9	7	12·7	1·5
11	—	—	·9	1	1·8	·9
12	—	—	·4	3	5·5	·4
13+	—	—	·3	—	—	·4
Totals,	294	100·0	100·0	55	100·0	100·0

From this table it will be seen that among the families now occupying three-apartment houses the proportion which consists of five and six inmates is practically double the average for the City, and in the case of those consisting of seven inmates is almost trebled. In other words, over 80 per cent. of the houses contain families of from five to seven persons. This group of "intermediate" houses was intended for a definite purpose, as a redress for overcrowding. That they are, in fact, being occupied by families selected on this basis, or at any rate are being reasonably utilised for housing married persons with families, is shown by the fact that at the last census (1921) only 36 per cent. of all the three-apartment houses in the City contained from five to seven persons. These data are given in the foregoing detail, as they indicate clearly the degree of adaptation of size of house to size of family which has taken place.

Following upon the decision of the Housing Committee that these houses should be devoted to the relief of overcrowding, an effort was made to assist the Manager of the City Improvements Department in the allocation of houses of the "intermediate" type among the most overcrowded families. Lists have been maintained, composed of householders whose families are living in excess of four persons per room in a single-apartment house and eight in a two-apartment house. In February of this year these lists contained over 2,500 names, as follows:—

Overcrowded families with incomes less than £3 per week, ...	1,762
,, ,, ,, ,, between £3 and £4 per week,	579
,, ,, ,, ,, over £4 per week, ...	342
Total, ...	2,683

These figures are to be taken merely as an example of families living under crowded conditions who have come to the notice of the department by application or otherwise.

In view of the rentals fixed for these "intermediate" houses, 12s. 6d. for three apartments and 14s. for four apartments, it was not thought to be worth while transmitting a list of the first group where the income was less than £3 per week, while the third group was outside the income limit fixed by the committee. Accordingly a preliminary list of the second group was forwarded to the Manager, containing those whose total incomes lay between £3 and £4 per week.

In order to ascertain what has happened in the interval to those applicants thus recommended on grounds of overcrowding, all were recently visited with the following result:—

	Number.	Percentage.
Tenants removed to Corporation Houses, ...	40	6·9
Tenants offered Corporation Houses, but refused on grounds of high rental, or other reasons, ...	50	8·6
Tenants since removed to other Houses not in Corporation Schemes, ...	147	25·4
Tenants who have not yet received an offer of alternative accommodation, ...	334	57·7
Applications pending, ...	8	1·4
Total, ...	579	100·0

This information reveals, even among the random sample dealt with, a large unsatisfied demand. More than half have not yet had their claims considered, while only some 7 per cent. have obtained a Corporation house. Notwithstanding this, a group of 147 families have secured for themselves other accommodation. Of these, 110 are known to have removed to larger houses, 31 have gone to unknown addresses, while 6 have gone to houses of the same size or to lodgings. These transferences have taken place during the past two or three year since the lists were begun to be compiled.

The indications from this brief survey reinforce what has all along been obvious, namely, the need for providing houses within the reach of the poorer classes of wage earners. It is among this class that overcrowding most prevails. The family with young children and with an income of between £3 and £4 has had scant opportunity of obtaining a suitable house, while those with incomes less than this are catered for by none of the existing housing schemes. These strata of the population, whose housing needs are very great, are having their demands met only by the slow process of decantation on the one hand, or, on the other, by the faint prospect of substitution in connection with slum-clearance and rehousing schemes.

As regards the utility of the "intermediate" housing schemes, the following conclusions may be drawn:—

(1) They form a group of houses definitely set aside for a public health purposes, *i.e.*, to assist in the relief of overcrowding.

(2) Judging by the standard of occupancy (as shown in the foregoing tables), there is a much better adaptation of size of house to size of family than exists in other similar houses in the City. To this extent the scheme is, in a measure, fulfilling its purpose.

(3) The data given above indicate that those families overcrowded to the extent of over four in a one-apartment house and over eight in a two-apartment house, and with incomes between £3 and £4 per week, have been dealt with to the extent of seven per cent.

The need for houses for the relief of overcrowding has been frequently demonstrated, and the following information from the 1921 Census may be repeated :—

OVERCROWDING (MORE THAN 3 PERSONS PER ROOM).

Persons per Room.	4-6	7-9	10-12	More than 12	Total.
1 Apartment, ...	14,131	1,643	62	..	15,836
2 Apartments, ...	...	19,596	2,830	117	22,543
3 Apartments, ...	...	...	1,376	115	1,491
4 Apartments, ...	...	...	...	52	52
	14,131	21,239	4,268	284	39,922

While some progress is being made through slum clearance, the majority of the slum houses which have been closed have not been seriously overcrowded. The foregoing table indicates the magnitude of the problem which still awaits attention.

A careful inquiry has been made into the ability of families of various sizes to pay the rents of "intermediate" houses, and, generally speaking, the range of income from £3 to £4 per week, having regard to the size of the family, is a not unsuitable standard so long as the minimum rents for "intermediate" houses remain at 12s. 6d. for three apartments and 14s. for four apartments. The provision of a still cheaper house, especially of the three-apartment type, and capable of being let at about 10s. per week, is urgently required. A house of this kind, if devoted more definitely to the relief of overcrowding, by the selection of tenants, should bring housing more into direct relationship with public health requirements.

I understand the Director of Housing will, at an early date, submit a design of a three-apartment house which might be let at about 10s. per week, and I think the committee should consider acquiring as much space as is possible on sites, if not within the City, then as near to the boundary as can be got, in order to enable the building of such houses to be proceeded with without delay. The provision of a cheap type of "intermediate" house would offer the advantage of improved accommodation to many families whose incomes do not amount to £3 per week, but whose needs as regards overcrowding are not less clamant than others with higher incomes. Some relaxation of the maximum standard of £4 per week might also be considered in cases of large families whose incomes exceed the present maximum of 80s., of which existing lists of overcrowded families contain a substantial number.

A. S. M. MACGREGOR.

14th November, 1928.

HOUSING (SCOTLAND) ACT, 1925.

For the purpose of the Housing Acts 16,954 inspections were made during the year. The details as to inspections, notices issued, and defects found are as follows :—

Division	Inspections	Notices Issued	No. of Defects	No. of Houses Affected
Central, ...	2,545	118	460	242
Northern, ...	2,734	267	822	517
Eastern, ...	4,724	248	865	520
South-Eastern, ...	1,715	171	666	380
South-Western, ...	5,236	790	2,127	998
	16,954	1,594	4,940	2,657

Following on these inspections, 1,594 notices calling for repairs were issued in terms of Section 3 of the Housing (Scotland) Act, 1925, these notices covering 4,940 separate defects in 2,657 houses.

Failure to implement the statutory notices occurred in 53 instances, and in respect of these authority was obtained to remedy the defects complained of, and to charge the owner with the cost of repairs. The actual work of repair was carried out by the Master of Works on behalf of the department, and the following table summarises the cases dealt with according to divisions :—

Sent to Master of Works to execute Repairs.

Division	Notices Issued	No. of Defects	No. of Houses Affected
Central, ...	—	—	—
Northern, ...	14	26	13
Eastern, ...	23	58	28
South-Eastern, ...	—	—	—
South-Western, ...	16	27	17
	53	111	58

CLOSING ORDERS.

The following tables show (1) the position as at 31st December, 1928, of properties dealt with in Closing Orders made in 1927; and (2) the properties in respect of which Closing Orders were made in 1928 and their position as at 31st December :—

Closing Orders made in 1927—Position of Properties at 31st December, 1928.

	Number of Houses.				Number of Families.		
	Total.	Demolished.	Closed.	Still in Occupation.	Transferred to Rehousing Scheme.	Substituted for transferred Families.	Removed elsewhere.
14 16 Union Street, ...	6	6	...	...	4	...	2
282 Buchanan Street (B.L.),	12	12	...	...	7	2	3
1320-1322 Gallowgate (F. and B.L.), ...	16	16	...	...	14	...	2
44-48 Reid St., Bridgeton,	5	5	..	...	4	..	1
715 Duke Street (B.L.), ...	10†	10	...	...	4	...	4
77-83 Wallace Street, and 187 189 Centre Street, ...	13	13	...	...	10	2	1
1586-1590 Paisley Rd. West,	2	2	...	...	...	...	2
87 Blackburn Street, ...	9†	...	9*	...	5	...	3
	73†	64	9	...	48	4	18

* Top Flat Houses.
† Includes Houses not occupied at date of representation.

CLOSING ORDERS MADE IN 1928—POSITION OF PROPERTIES AT 31ST DECEMBER, 1928.

	Number of Houses.				Number of Families.		
	TOTAL	Demolished	Closed	Still in Occupation	Transferred to Rehousing Scheme	Substituted for transferred Families	Removed elsewhere
87 Poplin Street (B.L.), ...	4	...	1	3	...	...	1
398 Townmill Road (F.L.),	15	...	15	...	14	1	...
80-84 Clyde Street (F.L.),	22	...	...	22	...	...	...
22-34 Parkhouse Lane (F.L.),	22†	...	16	6	8	1	...
41-43 Ladywell Street (F.L.),	9	...	...	9	...	...	...
774 Gallowgate (F.L.), ...	2	...	...	2	...	...	...
774 Gallowgate (B.L.), ...	2	...	...	2	...	...	...
774 Gallowgate (B.L.), ...	4	...	...	4	...	...	..
	80†	...	32	48	22	2	1

† 7 Houses unoccupied at time of representation.

RENT AND MORTGAGE INTEREST RESTRICTIONS ACTS, 1920 AND 1923.

Applications for Certificates by Tenants. — During the year 117 applications for certificates, in terms of Section 2 (2) of the principal Act, were received, compared with 61 for 1927. Of these, 8 were refused and 109 granted, 89 of the latter being in respect that the houses affected were not in all respects reasonably fit for human habitation, and 20 in respect that the houses were not in a reasonable state of repair.

The 8 refusals included 4 applications in which the houses were deemed to be decontrolled, while 75 of the 89 certificates granted for houses not fit for human habitation were for houses included in approved clearance schemes.

The following summary shows the distribution of the applications throughout the several administrative divisions, and gives comparative figures for each year since the Act came into operation :—

GLASGOW, 1928.—APPLICATIONS FOR CERTIFICATES UNDER SECTION 2 (2) OF THE INCREASE OF RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACT, 1920.

		Granted in respect that Houses were	
Division	Refused	(1) Not in all respects reasonably fit for human habitation	(2) Not in a reasonable state of repair
Central, ...	—	5	1
Northern, ...	2	1	—
Eastern, ...	1	49	—
South-Eastern, ...	5	27	5
South-Western, ...	—	7	14
City, ...	8	89	20
		109	
1920 (Oct.-Dec.), ...	147	263	459
1921, ...	97	154	180
1922, ...	10	2	8
1923, ...	75	180	160
1924, ...	21	83	69
1925, ...	16	15	28
1926, ...	9	28	12
1927, ...	9	30	22
1928, ...	8	89	20

Applications for Reports by House Factors and Owners. — In Section 5 (2) of the 1923 Act it is provided that where a certificate has been issued by the Sanitary Authority in accordance with the provisions of Section 2 (2) of the principal Act of 1920, and the house factor or owner afterwards executes the repairs required to put the house into a reasonable state of repair, he shall be entitled to receive a report to that effect on making application to the Sanitary Authority, and on payment of a fee of one shilling.

Two such applications were received during the year, and the following summary shows how they were dealt with :—

GLASGOW, 1928.—APPLICATIONS FOR REPORTS BY HOUSE FACTORS OR OWNERS UNDER SECTION 5 (2) RENT AND MORTGAGE INTEREST (RESTRICTIONS) ACT, 1923.

	Applications	
Division	Granted	Refused
South-Eastern,	—	1
South-Western,	—	1
	—	2
	2	
1923,	6	—
1924,	29	1
1925,	5	—
1926,	2	—
1927,	2	—

FARMED-OUT HOUSES.

In accordance with Section 70 of the Glasgow Corporation Order Confirmation Act, 1927, which authorised the Corporation to prescribe the maximum charge that might be made in respect of the occupancy of farmed-out houses and for the use of the fittings, furniture, and furnishings therein, the Committee on Health prescribed appropriate rates for furnished and unfurnished farmed-out houses of one, two, and three apartments.

Certain keepers of farmed-out houses appealed against the imposition of these rates, the appeal being upheld by the Stipendiary Magistrate, whose decision was later confirmed by the Court of Session. Power to control the rents of farmed-out houses is accordingly delayed until the legal difficulties which have emerged are put right by a new clause, which will be incorporated in the next Provisional Order to be promoted by the Corporation.

TENTS, VANS, AND SHEDS.

In his report for the year 1927, the Sanitary Inspector for the Eastern Division described a new phase of the housing problem which had arisen at Vinegarhill Showground, where tents, vans, and sheds were being used as permanent habitations and where insanitary conditions had been created in consequence of the overcrowding of the site. Similar conditions, although on a lesser scale, had also arisen elsewhere in the Eastern Division, as well as in other districts of the City. After full consideration of the problems involved, the Corporation decided to apply to Parliament for powers additional to those contained in the Public Health (Scotland) Act, 1897, which would enable them not only to control the use of the site but to prevent temporary structures from becoming permanent habitations. The necessary powers have been obtained in The Glasgow Corporation Order, Confirmation Act, 1929, which has recently been placed upon the Statute Book, viz. :—

REGULATION OF TENTS, VANS, &c.

33. (1) It shall not be lawful for any person without the consent of the Corporation acting as the Local Authority for the City under the Public Health (Scotland) Act, 1897—

(*a*) To let or use or permit to be used any land situate within the City for occupation by any tent, van, shed, or similar structure used or intended to be used for human habitation; or

(*b*) to place or keep on any land situate within the City any such tent, van, shed, or similar structure;

and such consent may be given for such period and on such conditions as the Corporation think fit: Provided that consent shall not be required by any person in respect of—

(i) Any tent, van, shed, or similar structure placed or kept by the occupier of a dwelling-house upon any land connected therewith and used by him or members of his household;

(ii) Any tent, van, shed, or similar structure which is only used or intended to be used in the City for human habitation by the occupier for a period of not more than fourteen days at any one time and is not his sole or principal means of habitation; or

(iii) Any tent, van, shed, or similar structure used or intended to be used for human habitation by a person whose regular employment or occupation is that of a roundabout proprietor or travelling showman (not being a pedlar or hawker); Provided that the period during which such tent, van, shed, or similar structure is so used in the City shall not exceed a period of six months in any period of twelve months and such tent, van, shed, or similar structure is only used in connection with his employment or occupation:

(2) Any person aggrieved by the withholding by the Corporation of consent under the provisions of this section may within twenty-one days from the date of the decision of the Corporation appeal to the Sheriff and the Sheriff may make such Order and on such terms and conditions as to the Sheriff may seem just.

(3) If any person offend against any of the foregoing provisions of this section he shall be liable to a penalty not exceeding five pounds and in the case of a continuing offence to a further penalty not exceeding forty shillings for every day during which such offence

continues after conviction therefor and all offences against the said provisions may be prosecuted before the Magistrate in the Police Court.

(4) Section 73 (Tents and vans used for human habitation) of the Public Health (Scotland) Act, 1897, shall in its application to the City be extended so as to authorise the Corporation to make bye-laws with respect to the number of tents, vans, sheds, or similar structures used or intended to be used for human habitation to be permitted on any land, the area to be allotted to each such tent, van, shed, or similar structure and the provision of adequate lighting, and Sections 183 to 187 of the said Act shall extend and apply to any bye-laws made by the Corporation under this section.

(5) Nothing in this section shall prejudice or affect the powers and jurisdiction of the Dean of Guild of the City under the Police Acts.

Bye-laws in accordance with these provisions are now under consideration.

SECTION XI.

BACTERIOLOGICAL LABORATORY.

REPORT BY DR. R. M. BUCHANAN, City Bacteriologist.

The laboratory report for 1928 continues to show an increasing demand for bacteriological investigation, due to the changing conditions in medical practice and the evergrowing obligations of public health administration. The methods of investigation at the same time are being continually modified in accordance with the rapid expansion which has marked recent years in the development of the science of bacteriology.

The examinations of morbid material from suspected cases of infectious diseases and of samples from the water and milk supplies and from food-stuffs received during the year numbered 33,626. Very notable increases took place in the specimens for Venereal Diseases, Hospital preadmission Examinations, Scarlet Fever, Food Poisoning, and Dysentery, while on the other hand decreases fall to be noted in suspected cases of Diphtheria, Diphtheria Contacts, Enterica, Pulmonary Tuberculosis, and from Milk Supplies.

DIPHTHERIA.

The patients from whom the specimens were taken were infected from other patients or positive carriers or contacts. There was no evidence of the transmission of the infection by milk. There can be little doubt that the widespread application of pasteurisation and the bacteriological scrutiny of those engaged in milk production, when occasion arises, are measures largely responsible for the disappearance of milk-borne infection.

Suspected Cases.—In the course of the year 8,386 swabs from suspected cases were sent in for the diagnosis of diphtheria. Of these 1,502, or 17 per cent., were reported as positive. During the preceding year 8,443 swabs were received and positive results were obtained in 22 per cent.

As the diphtheria bacillus usually enters by the mouth or nose and leaves the body in the discharges from these cavities an analysis has been made from the clinical data supplied by the medical practitioners as to the localisation of the lesions and the results are shown in the following table :—

Material submitted on swab from	Cases.
Pharynx, ...	7,746
Pharynx and nose, ...	332
Pharynx and larynx, ...	163
Larynx, ...	76
Nose, ...	65
Conjunctiva, ...	3
Ear, ...	1
	8,386

Contacts.—While it is recognised that 1 to 2 per cent. of the population at large may harbour the bacillus of diphtheria in the nose or throat without symptoms of the disease, a much greater number of those who come in contact with diphtheria patients reveal the presence of the bacillus when the throat is examined. In 1928 these contacts numbered 1,454, and the diphtheria bacillus was found in 113, or 7·7 per cent. In 1927 there were 2,790, with positive results in 311 instances, or 11 per cent. There is thus a very notable decrease of over 1,000 in the number of contact swabs submitted during the past year, which is in some measure a reflex of the lessened prevalence of the disease.

The examinations were made from contacts in two hundred and ninety-seven households (619), five schools (480), six hospitals (219), two reception houses (7), two nursing homes (3), two children's homes (65), one training college (46), two hotels (5) one dairy (9), and one farm (1).

Virulence.—Virulence tests to the number of 91 were carried out with the bacillus isolated from swabs taken from suspected cases, convalescent cases, carriers and contacts. In 47 of these, or 51·6 per cent., the organism proved to be virulent. In the previous year 165 cases were examined and 40 per cent. were virulent.

The frequent occurence in the nose of an organism having the microscopical and cultural appearance of the bacillus of diphtheria but having no disease-producing power requires that any diphtheria-like bacillus isolated from the nose has to be subjected to a virulence test before a definite opinion is recorded. This test was accordingly applied in 24 cases of suspected nasal diphtheria, with the result that the bacillus isolated was found to be non-virulent in 6, or 25 per cent.

Pre-admission Examinations.—As a preventive measure against the introduction of diphtheria by children selected for admission to the Corporation Country Homes, 504 of these children were examined for the presence of the diphtheria bacillus. It was found that as many as 10, or 2 per cent., were harbouring the organism in their throats.

Pseudo-diphtheria Bacillus (Bacillus of Hofmann).—In connection with the routine examination of throat swabs for the presence of B. diphtheriæ it is a notable fact that the bacillus of Hofmann was found much less frequently than in some previous years.

ENTERICA GROUP.

In the course of the year 209 specimens of blood from 193 patients were received for the serum diagnosis of cases suspected to be suffering from typhoid or paratyphoid fever. These specimens reach the laboratory either in capillary tubes or in wide tubes containing, as a rule, a minimum of 2 c.c. of sample. When the capillary tube is submitted the examination is restricted to typhoid, since in the case of paratyphoid fever satisfactory results are obtainable only when the larger quantity of blood is available.* The capillary tube is, however, still widely used, there being 93 specimens of this type compared with 100 of the larger amount. The latter yielded 7 positive reactions for typhoid and 5 for paratyphoid B, while 5 reactions were indefinite. From the capillary specimens there were obtained 7 positive reactions for typhoid, 22 reactions being indefinite. Repeat specimens to the number of 16 were submitted for test by the macroscopic method, and, of these, 2 were typhoid positives and 1 paratyphoid B, 3 remaining indefinite.

The examinations of urine and fæces from suspected cases, contacts and convalescents has, as formerly, played an important part in dealing with these diseases. 520 of these specimens underwent cultural examination. The typhoid bacillus was found in 7 specimens of fæces and once in urine, the paratyphoid organism (B) occurring in 6 specimens of fæces and in 4 urines. No case of paratyphoid A was met with during the year, and none of the positive cases was connected with any outbreak.

*This method is being replaced as far as possible by that of collecting the blood in larger quantity (say 2 to 5 c.c.) which allows the test to be carried through with conclusive result and without the loss of time often involved in repeat examinations.

DYSENTERY AND FOOD POISONING.

Of the 33 cases of dysenteric infection proved in the laboratory during the year it may be noted that only three occurred before the middle of May, one being a chronic amœbic case. The first six months claim only 5, while the remaining 28 fall into the second half of the year. Half of the total occurred in the two months following the first week of August. The great majority of the cases were of the bacillary type, while those that proved to be amœbic were either war legacies or recent infections contracted abroad, with the exception that one ex-service man infected two of his family with amœbic dysentery. It still continues to be seen that there is little tendency for this latter type to spread in this country. The Sonne type, to which attention has been drawn in recent years, was found on three occasions in 1928 as isolated infections. It is probable that illnesses due to the Sonne organism occur more commonly than is known, since there have been found in the laboratory certain strains of mild virulence associated with symptoms of only 24-48 hours' duration. Medical advice may not be sought when only one, or perhaps two, members of a family are upset for such a short period of time. The results have a two-fold effect as regards administration: (1) the source of the infection remains undiscovered; and (2) the virulence of the organism is liable to be increased through successive infections. As an illustration of these two points, the history of a series of illnesses in a family of five was recently investigated by Dr. Wiseman and the physician in charge of the cases. The assistance of the laboratory had been deferred until the fifth member was attacked and had already been in a febrile condition for ten days. The three members who had first been affected, one after the other, were then well and the fourth almost well. The fifth member who became ill 8 days after the first case, appeared to have gone through quite a debilitating illness which was proved to be due to the dysentery bacillus of Sonne. The inquiry showed clearly (1) that the whole family had suffered from the same type of infection, the first illness being short-lived; (2) that had the incidence been confined to the first four, the cause would have been undiscovered; and (3) that apparently the virulence of the infecting organism (acting perhaps on a somewhat more susceptible subject) had become raised to some extent, producing the results that led to the inquiry.

Three cases of food poisoning were determined during the year. One was a case of suspected dysentery in Belvidere Hospital and in the second case the organism was found in the spleen and bowel which were examined post mortem. No work was done in the laboratory with regard to the sources of these infections. In the third case the organism was found in the specimen of fæces which was brought from the Royal Infirmary. This third patient, an adult of 30 years, was one of a family who had partaken of a meal of "chipped tomatoes" and stewed meat. They all exhibited signs of food poisoning. The investigating medical officer was successful in finding an extremely small quantity of the remains of a meal on a plate. On examination this remnant yielded the organism which had infected the patient. The organism was the same in all the cases, viz., the Mutton or Aertrycke type of the Salmonella group of bacilli.

ENCEPHALITIS.

Among six post-mortem examinations made to determine the cause of death in cases of acute illness presenting indefinite symptoms there was one which proved to be encephalitis in an early and very acute stage. The patient, a girl of 17 years of age, died within three days of an illness characterised mainly by sickness and persisting vomiting and latterly by some difficulty in swallowing. Numerous small hæmorrhages were found in the alimentary tract, and there was venous congestion of the whole central nervous system associated with some very minute hæmorrhages in the cerebrum pons, and medulla. In these parts, but chiefly in the two latter, the microscope showed an encircling aggregation of cells in the walls of certain vessels and frequent perivascular hæmorrhages. Minute hæmorrhages were also evident in the central nuclei underlying the floor of the fourth ventricle. Throughout both the white and the grey matter of the bulb there were distributed many round mononuclear cells, the uniformity of whose distribution was at several points interrupted by small areas in which these cells were more or less aggregated. These observations applied also to the upper part of the spinal cord. No changes were discernible in the nerve cells anywhere.

It may be said that the lesions mentioned are similar in kind to those which may be met with in the closely allied condition known as poliomyelitis. This close relationship between the morbid anatomy of encephalitis and poliomyelitis suggests that these diseases are due to variants of the same neurotrope virus acting on different regions of the central nervous system. In this connection it is of interest to recall that another group of closely allied diseases, including smallpox (variola), alastrim (paravariola), and vaccinia, are now held to be due to variants of the dermotrope variola virus.

ANTHRAX.

In continuation of the examinations of the previous year goatskin thongs forming the binding of orange boxes were examined for anthrax during the first four months of 1928. 208 samples were tested. 4 samples were used in each test, making 52 tests in all. The bacillus of anthrax was found in 9 of the tests, and it was noted that the sources involved in the positive tests were the same as those that have figured conspicuously as providers of " positives " since the inception of these examinations.

25 shaving brushes and portions of 3 rugs were also examined for anthrax with negative results.

No case of anthrax in man was found during the year, although one or two persons with lesions suggestive of the disease were examined in the laboratory.

TETANUS.

No cases of tetanus as a wound complication have come under investigation in 1928.

A supply of tetanus antitoxin is provided by the laboratory for prophylactic administration in the prevention of tetanus after injuries of a nature that might allow the tetanus bacillus to develop, such as a punctured, lacerated, or contused wound, or one contaminated with soil or with street dust or dirt.

Four applications have been made by general practitioners for the serum to be used as a precautionary treatment in cases of this kind. In none of these cases did tetanus supervene.

PLAGUE.

The last case of human plague in Glasgow occurred in a seaman in 1911, but as it continues to be endemic in many parts of the world precautions against its re-entry are in constant activity. As the infection of man occurs in the majority of cases from the bite of a rat-flea which has previously fed on a plague rat, one of these precautions is the bacteriological examinations of the rats found in the ships and in the harbour for any evidences of the disease.

During the year 203 rats from these sources have been subjected to examination with negative results. Of this number 57 were Mus decumanus, 92 Mus rattus, and 54 Mus alexandrinus. No plague-infected rat has been discovered in Glasgow since 1902.

The popular belief that the male rat greatly exceeds in number the female received no confirmation from the laboratory experience. During the past year, for instance, the males numbered 115 and the females 88, giving a relative proportion of males to females of 10·5 to 8, which is in accord with the findings of previous years.

A disease of the liver of two rats (Mus alexandrinus) presented some resemblance to plague, but it was found to be a somewhat rare condition, due to accumulation of the eggs of the parasitic worm Hepatica hepaticola.

INFECTIVE JAUNDICE (WEIL'S DISEASE).

As in the previous year there has been no case of infective jaundice with its symptoms of icterus, fever, hæmorrhage, albuminuria, muscular pains, and conjunctival injection. The rat being also a transmitter of this disease, all those brought to the laboratory (203) have been examined for the causative micro-organism, the curved, bent, or hooked spirochæta known as Leptospira icterohæmorrhagiæ. This investigation has now been in operation since 1924, and only in that year has the leptospira definitely shown its presence.

Several cases of jaundice had then occurred presenting the clinical symptoms of this infective disease, and one of these cases died. From the premises (piggeries) attached to the institution in which this fatal case was a resident 7 rats were examined and one of them revealed the presence of the spirochæte in the kidneys, liver, and spleen.

It would appear from records of the occurrence of the disease in the human subject, and of the prevalence of the spirochæte in the rat, that the infection exists chiefly along the eastern side of the country.

OPHTHALMIA NEONATORUM.

Twenty years ago a committee of the British Medical Association found that more than one-third of those in Blind Schools in Great Britain were blind as a result of ophthalmia neonatorum. The collaboration of the laboratory with the administrative and clinical activities of the Health Department is exercising a profound effect on the prevention of this preventable disease.

Specimens of exudate from the eyes of suspected cases of ophthalmia neonatorum were examined with the following results:—

Specimens from	Number.	Positive.	% Positive.
Medical Officer of Health, ...	775	111	14·3 per cent.
Medical Practitioners, ...	24	3	12·8 ,,

These figures indicate examinations and not the actual numbers treated. In many of the cases the inflammatory exudate was repeatedly examined to test the progress of treatment towards cure. The previous year's examinations numbered 738, and of these 93, or 12·6 per cent., were positive.

Wassermann Reaction.—The subject of the technique of the Wassermann Reaction was fully considered by a Committee of the Medical Research Council some years ago, with the result that four approved methods of performing the test were decided upon. In this laboratory, Method No. 1, as performed by Harrison, has been used since 1921 with satisfactory results. The undernoted figures are evidence of the extent of the work done, and indicate the importance of the Wassermann Test as a valuable aid in the diagnosis of syphilis, as a means of estimating the efficiency of treatment and as a proof of cure.

During the year 11,229 specimens were subjected to the Wassermann Test, comprising 11,088 specimens of blood and 141 specimens of cerebro-spinal fluid. Of the total number 3,572 were duplicates, that is from patients under treatment.

The sources of specimens were as follows:—

1,679 were received from City Practitioners.

4,695 were received from Institutions.

3,773 were received from Public Health Department.

1,082 were received from Local Authorities under special arrangement.

The percentage positive rate for specimens sent in for diagnosis was 18·6, while that for specimens sent from cases undergoing treatment was 52·8. It may be stated for comparison that the specimens examined in 1927 numbered 10,165, and that the corresponding positive rates were 20·8 and 54·0. In the case of 81 specimens of blood submitted, the result of the Wassermann test could not be reported owing to technical difficulties connected with hæmolysis (29), anti-complementary action (11), and insufficient serum (41).

The Wassermann Test requires the use of several biological reagents, and owing to their complicated nature and to the fact that the actual mechanism of interaction of these reagents is so little understood, simpler tests for the detection of syphilis have been sought and elaborated. As a result the so-called flocculation tests of Sachs-Georgi (modified and named by Dreyer and Ward the Sigma reaction), Meinicke, Vernes, and Kahn have been introduced.

The principle underlying these four "flocculation" tests is the addition of a specially prepared antigen to the patient's serum. In the case of a syphilitic serum a flocculation or precipitate is produced, whereas in a normal serum no such phenomenon occurs. The advantages of these tests are (*a*) facility of execution; (*b*) only one reagent, the antigen, is required; (*c*) the results are quantitative; and (*d*) in treated cases these tests are more sensitive than the Wassermann, for they may remain positive long after the Wassermann reaction has become negative, which may indicate that further treatment of the patient is desirable to prevent a relapse.

The Kahn precipitation test, as an aid in the diagnosis of syphilis, has been subjected to extensive trial during the past year in this laboratory by Dr. John Wyllie. Several reasons governed its choice for this experimental investigation. It is more rapidly performed and simpler than the Sigma reaction; it possesses certain advantages over the Meinicke test: greater sensitiveness, greater stability of the antigen mixture, wider applicability to different types of sera and shorter time required for reaction. The Vernes test requires an expensive photometer for reading the results, which depend on the degree of optic density. The Kahn test consists in bringing together a cholesterinised alcoholic extract of beef heart muscle (diluted with normal saline solution) in three definite proportions and the specimen of the patient's blood-serum. The rack containing the tubes is placed in the water-bath at 37° C. for 15 minutes, then vigorously shaken for three minutes and the results read. If the medium becomes clear with the formation of a definite precipitate the result is regarded as a complete positive reaction and is read four plus (+ + + +); proportionately weaker reactions are read 3, 2, and 1 plus respectively.

The following are the results of the comparison of the Kahn and Wassermann reactions on 1,099 sera taken at random from cases of treated and untreated syphilis and non-syphilitic cases:—

Groups in which there was agreement.

1. Kahn positive,	with Wassermann reaction	positive,	-	546
2. Kahn negative,	„ „ „	negative,	-	323
3. Kahn doubtful,	„ „ „	weak or doubtful,		74
		Total, -	-	943

Groups in which there was disagreement.

(*a*) Complete disagreement.				
1. Kahn positive,	with Wassermann reaction	negative,	-	9
2. Kahn negative,	„ „ „	positive,	-	5
(*b*) Slight disagreement.				
3. Kahn positive	„ „ „	weak or doubtful,		14
4. Kahn doubtful,	„ „ „	negative,	-	52
5. Kahn, „	„ „ „	positive,	-	52
6. Kahn negative,	„ „ „	weak or doubtful,		24
				156

These results indicate complete agreement between the two tests in 943 cases, equal to 85·8 per cent., while disagreement was (*a*) complete in 14 cases, equal to 1·3 per cent., and (*b*) slight in 142 cases, equal to 12·9 per cent.

Microscopical Examination for Spirochæta Pallida.—Specimens from lesions in suspected cases numbered 17. Of these 5 were positive.

Microscopical Examination for Gonococcus.—During the year 1,745 specimens from cases, other than ophthalmia neonatorum, were examined for the gonococcus. Of these:—

694 were from City Practitioners.
245 were from Institutions.
781 were from Public Health Department.
25 were from Local Authorities.

The positive percentage of specimens taken for diagnosis was 22·6, and from patients undergoing treatment 21·2.

MILK SUPPLY.

I.—In Relation to Bovine Tuberculosis.

1. *Milk from Town and Country Cows.*—Throughout the year 238 samples of milk were received from the Veterinary Surgeon from cows with disease of the udder. These samples were examined by microscopical and biological methods.

	Samples.	Tuberculous
Town Cows, ...	182	2
Country Cows, ...	54	—
Duplicates, ...	2	1

2. *City Milk Supply.*—200 specimens of milk from the City's milk supply were examined during 1928. These specimens were taken at railway stations, and at consignees' premises after road transport.

Samples.	Tuberculous.	°/o Tuberculous.
200	8	4

3. *Hospital Milk Supply.*—During the year 316 samples were examined. These were taken from the sources of supply of the City hospitals. No specimen was shown to be tuberculous.

4. *Other Local Authorities.*—From various outside Local Authorities 92 samples of milk were received, of which 8 were shown to be tuberculous.

Samples.	Tuberculous.	°/o Tuberculous.
92	8	9

5. *Acid-fast Bacilli.*—During the year 15 samples of milk showed the presence of acid-fast bacilli; only 1 of these was proved by animal inoculation to be the bacillus of tuberculosis.

II.—In Relation to Bacterial Content.

City Milks.—Milks coming into the City, and sampled at the railway and road transport stations, are examined for bacterial content. This year 201 samples were examined, as against 203 during 1927. The following table presents the results obtained in 1927 and 1928:—

	Number examined	Samples below maximum of Certified Milk (30,000 per c.c.)	Samples below maximum of Grade A Milk (200,000 per c.c.)	Samples above 200,000 per c.c.
1928, - -	201	89 (44°/o)	65 (32°/o)	47 (23°/o)
1927, - -	203	55 (27°/o)	78 (38°/o)	70 (34°/o)

The Bacterial Count in Samples of City Milk during 1928 appears in the following table as an indicator of purity of production.

Total number of samples examined—201.

Maximum counts at 37°C for designated milks (used as a basis of comparison).	Average Bacterial count at 37°C and the number of samples involved.
Below 30,000 per c.c. (Certified), ...	15,800 per c.c. for 89 samples = 44°/o
Below 200,000 per c.c. (Grade A.), ...	82,700 per c.c. for 65 samples = 32°/o
Above 200,000 per c.c., ...	323,000 per c.c. for 20 samples = 10°/o
	711,800 per c.c. for 11 samples = 5°/o
	3,200,800 per c.c. for 16 samples = 8°/o

It will be observed (1) that 44 per cent. of the milks sampled on arrival in the City show a most commendable purity as regards bacteria, the count being well within the maximum allowed for Certified Milk; (2) that 32 per cent. are far below the maximum allowed for Grade A Milk; and (3) that the remaining 23 per cent. are indicative of production under conditions which still leave much to be desired.

Hospital Milk.—The milk supplied to the City hospitals is designated Grade A (T.T.) in the case of four hospitals and Certified in the case of one hospital. The bacterial content was determined fortnightly, the average counts for the year 1928 being as follows:—

		Grade A (TT)		Certified
Hospital, No. 1	No. 2	No. 3	No. 4	No. 5
73,199	26,945	15,358	9,247	4,712

It may be observed that these average counts are well under the required maximum pertaining to Grade A (T.T.) and Certified Milk (namely, 200,000 per cc. and 30,000 per cc. respectively).

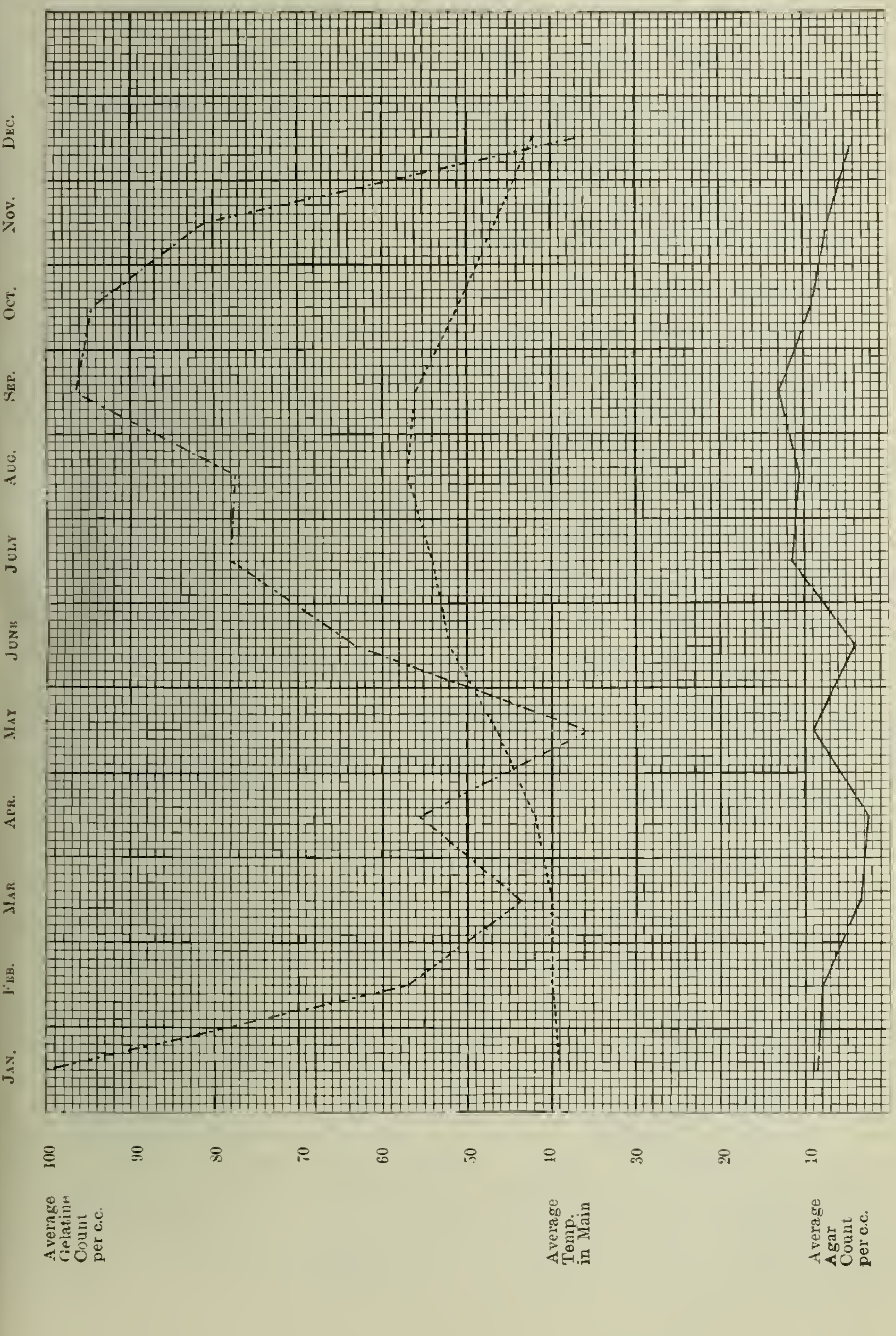
Designated Milk.—The designated milks examined for the Health Department during 1928 numbered 256, an increase of 51 on those sampled in 1927. It was found that 249 were within the maximum count allowed, while 7 exceeded it, as the following table shows:—

	Samples	Within maximum count	Over maximum count
Certified Milk, - -	65	64	1
Grade A Pasteurised, -	12	12	0
Pasteurised, - - -	20	19	1
Grade A, - - -	11	9	2
Grade A (T.T.), - -	148	145	3
	256	249 (97°/o)	7 (3°/o)
1927, - - - -	205	189 (92°/o)	16 (8°/o)

LOCH KATRINE WATER SUPPLY.

The water as it is delivered from the tap is subjected to a bi-monthly examination as a safeguard against any danger of contamination. This routine examination, which has been systematically undertaken in the laboratory during the past 29 years, serves to show that the average bacterial content generally reaches its lowest in March, April, and May, and frequently also in December, and that it tends to rise through June, July, August, September, and October, and to fall again through November and December. It has also been a frequent observation that a high average count is registered in January.

The chart which faces shows the monthly average bacterial content for 1928 as determined by agar plate culture at blood heat and by gelatine plate culture at room temperature and its relation to the


JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEP.
OCT.
NOV.
DEC.
Average Gelatine Count per c.c.
100
90
80
70
60
50
40
Average Temp. in Main
30
20
10
Average Agar Count per c.c.

temperature of the water as ascertained in a 36-inch main at Canniesburn. The temperature record was supplied by the courtesy of Mr. George Henshilwood, C.E., Water Engineer and Manager.

MICROSCOPICAL EXAMINATION OF TISSUES.

Microscopical examination was carried out on 25 specimens of tissue, with a view to diagnosis. 19 were of the nature of tumour growths, 4 were from suspected cases of tuberculosis, and 1 was the somewhat rare condition blastomycosis.

The specimens were received from general practitioners, City hospitals, and the Health Department.

INSECT PESTS (Non-verminous) from Dwellings and Factories.

Various insect pests (apart from vermin) were submitted for identification from time to time during the year. They comprised beetles, cockroaches, moths, flies, "firebrat," ants, booklice, and mites. In several instances they were associated with serious damage in wood, furniture, and food-stuffs. The specimens numbered 31, and included 19 different species. The so-called German cockroach (Blatella germanica) (known in America as the croton bug) continues to spread in the City. In one instance a small fly (Limnophora humilis) was submitted for identification from a country house which it invaded in the first week in October in swarms. It was of the same family as the more familiar root flies (Anthomyidæ) and is known to invade houses in this way at that particular season of the year.

VISITORS TO THE LABORATORY.

As in previous years the laboratory has been visited by many of the medical practitioners in the City and from elsewhere, who have expressed appreciation of the facilities which it provides for the examination of specimens and the methods of reporting the results of examination.

SUMMARY OF EXAMINATIONS FOR THE YEAR 1928.

The examinations performed in the Bacteriological Laboratory during 1928 numbered 33,626, as compared with 34,397 in the previous year. The sources of the materials submitted were as follows :—

Tuberculosis (Human)—

	Medical Practitioners.	Health Department.	Other Local Authorities.
Microscopical Examination—			
Sputum,	2,459	1.471	92
Urine,	68	31	7
Cerebro-Spinal fluid,	7	6	6
Ascitic Fluid,	—	2	—
Pleural Effusion,	2	1	1
Pus,	16	11	2
Swab.	—	2	—
Fæces, 3 ; smear, 1 ; fat, 1,	2	3	—
Biological Test,	98	62	18

	Medical Practitioners.	Health Department.	Other Local Authorities.
Tuberculosis (Bovine)—			
Milk—			
Microscopical Examinations, ...	6	753	93
Biological Test—			
Town Cows, ...	—	184	—
Country Cows, ...	—	52	—
City Milk Supply—Station Samples,	—	201	—
Samples from Hospital Milk Supplies,	—	316	—
Miscellaneous, ...	6	—	94
Typhoid and Paratyphoid Fever—			
Blood (agglutination), ...	162	31	16
Urine, fæces (cultures), ...	60	476	22
Dysentery—			
Fæces, ...	19	125	9
Urine, ...	—	6	—
Blood, ...	—	5	—
Diphtheria—			
Throat Swabs from suspected cases,	7,785	384	217
Throat Swabs from contacts, ...	—	1,454	—
Virulence Tests,...	58	24	9
Preadmission Swabs, ...	—	504	—
Milk, ...	—	—	2
Vincent's Angina—			
Throat Swabs from suspected cases,	50	2	—
Cerebro-Spinal Fever—			
Post-nasal Swabs, ...	1	4	—
Scarlet Fever—			
Cultural Tests for Hæmolytic Streptococci,	16	267	4
Ophthalmia Neonatorum, ...	24	775	—
Venereal Diseases—			
Wassermann Test, ...	6,374	3,773	1,082
Gonococcal Infections other than Ophthalmia Neonatorum, ...	939	781	25
Spirochæta pallida, ...	17	—	—
Specimens taken in Laboratory, ...	12	—	—
Anthrax—			
Goatskin bindings of orange boxes,	—	190	—
Shaving brushes, ...	—	25	—
Rugs, 3; skin from finger, 1, ...	1	3	—
Plague—			
Examination of rats from Ships, Docks, and City, ...	—	204	—
Infective Jaundice—			
Material from Patients, ...	—	2	—
Examination of rats from various sources in the City, ...	—	204	—
Malaria—			
Blood, ...	9	2	—
Bacterial Diagnosis (various Diseases)—			
Sputum, 2; fæces, 13; urine, 12; miscellaneous, 54, ...	47	32	2
Food Poisoning—			
Examination of Food-Stuffs, 11; materials from patients, 28, ...	1	36	2

	Medical Practitioners.	Health Department.	Other Local Authorities.
Water—			
Bacterial Content,	3	4	1
Milk (Bacterial Content)—			
Under Milk (Special Designations) Order,	4	256	54
City Milk Supply,	—	201	—
Hospitals Milk Supply,	—	317	—
Blood—			
Blood Count,	—	105	—
Differential Count,	—	2	—
Cytological examination by smears,	8	3	—
Cell Count,	2	—	—
Pernicious Anæmia,	2	2	—
Histological Examination—			
Tumour and Tissues for Malignancy,	5	13	1
Tissue for B. tuberculosis,	3	3	—
Fungoid Diseases—			
Ringworm,	—	4	—
Chemical Examinations—			
Urine, 31 ; vomit, 1 ; fæces, 2,	11	23	—
Preparation of Vaccines,	9	1	1
Parasites—			
Scabies, 2 ; fæces, 1,	1	2	—
Insect Pests from Dwelling-houses and Warehouses,	—	30	—
	18,287	13,370	1,760
		33,417	
Water Department—			
Tap Water,	24		
Reservoirs,	48		
	—	72	
Baths Department—			
Water from Swimming Ponds,		137	
		33,626	

R. M. BUCHANAN.

SECTION XII.

PART I.

FOOD POISONING.

The sources of information as to the occurrence of symptoms suggestive of food poisoning continue to be the family concerned, the police, or the daily press. The following is a summary of a few of the more important instances which were investigated.

The case of a girl, age 5 years, in Maryhill district, who died after partaking of fish and chip potatoes was investigated. Of the other members of the household, numbering ten persons, four and a visitor who had also partaken of the fish and chips on 2nd January were stated to have had symptoms of illness. Bacteriological examination of a specimen from one of the cases showed no evidence of an organism of the food poisoning group. The conditions found *post mortem* (*a*) Tabes Mesenterica; (*b*) peritoneal adhesion; and (*c*) strangulation of small intestine, were quite sufficient to cause death apart from toxæmia due to any specific organism.

Illness due to an excessive amount of arsenic in jam was brought to notice towards the end of March. This matter is dealt with in the report by the Senior Food Inspector.

During June a boy of seven years died in Belvidere Hospital of acute enteritis alleged to have been caused by eating chip potatoes. *Post mortem* examination showed an acute gastro-enteritis, but bacteriological examination showed no evidence of the presence of organisms of the food poisoning group, while chemical analysis revealed no trace of metallic poison. The cause of the condition was undetermined.

The illness of ten persons in a village on the outskirts of the city was reported by the County Authorities as due to the eating of boiled ham, obtained from a large warehouse in Glasgow. About the same time another complaint was received from another County Authority suggesting a similar cause of illness in respect of sickness in their area. About 1,500 hams had been sent out during the week in question, without complaint of sickness other than the above. Samples taken from the stocks on hand were examined with negative result. It was quite impossible to affirm or deny that the hams were the source of these illnesses.

Two cases with symptoms suggesting food poisoning as a result of eating jellied veal were taken to the Western Infirmary in August. Only members of both families consuming the veal were sick. No other illnesses were reported, although it was stated that about thirty other families purchased the veal. Bacteriological examination of veal obtained at the shop showed the presence of B. paracoli, a lactose fermenting bacillus.

Gastro-Enteritis—Due to Coal-tar Products in Aerated Waters.—In two instances mild gastro-enteritis was caused in patients who had consumed aerated waters supplied in a bottle which contained traces of coal-tar disinfectants. The manufacturers of aerated water take reasonable precautions to clean their bottles, but, evidently, their washing process is not sufficient to remove all traces of such substances as disinfectants—people use bottles belonging to the aerated water manufacturers for household purposes after they have been emptied of their original contents. These bottles may be used for containing disinfectants, paraffin, &c., and are subsequently returned to the manufacturer.

OPERATIONS UNDER THE SALE OF FOOD AND DRUGS ACTS; THE MILK AND DAIRIES (SCOTLAND) ACT, &c.

The Sale of Food and Drugs Acts.—In terms of these Acts, a total of 5,235 samples were procured and examined, 3,902 being informal, and 1,333 formal or statutory examples. Of these, 323 and 106 respectively, were subsequently certified as non-genuine. Proceedings were instituted in respect of 51 of the formal or statutory samples, while, in addition, there were five prosecutions for infringements of the provisions relating to dealing in margarine. The total fines and expenses imposed under these Acts amounted to £217 12s.

Further details of operations are contained in subjoined abstract and tables, and in the appendices.

Abstract of Total Samples Examined during 1928.

	Informal		Statutory		Percentage Adulterated		Percentage of Samples taken in each Group to Total.	
Article	Taken	Non-Gen.	Taken	Non-Gen.	Inf.	Stat.	Inf.	Stat.
Milk and Cream, ...	2.476	239	867	59	9·7	6·8	63·5	65·0
Milk Products (Butter, Cheese, &c.), ...	678	13	102	6	1·9	5·9	17·4	7·7
Cereals. &c., ...	56	1	52	—	1·8	—	1·4	3·9
Spirituous Liquors,	127	15	21	1	11·8	4·8	3·3	1·6
Drugs.	181	6	38	1	3·3	2·6	4·6	2·9
Flavourings and Condiments.	53	1	82	2	1·9	2·4	1·4	6·2
Miscellaneous Foods,	331	48	171	37	14·5	21·6	8·5	12·8
Totals,	3,902	323	1,333	106	8·3	8·0	100·0	100·0

ABSTRACT OF INFORMAL AND STATUTORY SAMPLES OF SWEET MILK EXAMINED DURING 1928.

Informal				Month	Statutory			
Number Taken	Number Presumed Non-Genuine	Average Percentage Composition			Number Taken	Number Presumed Non-Genuine	Average Percentage Composition	
		Fat	Non-Fat				Fat	Non-Fat
		%	%				%	%
197	14	3·46	8·82	January,	81	4	3·40	8·74
227	15	3·43	8·79	February,	76	5	3·45	8·73
273	31	3·44	8·81	March,	73	4	3·44	8·71
195	19	3·49	8·69	April,	74	11	3·45	8·73
243	57	3·42	8·62	May,	81	14	3·41	8·56
215	17	3·38	8·77	June,	65	6	3·36	8·78
125	16	3·54	8·76	July,	47	3	3·61	8·71
176	15	3·50	8·65	August,	63	4	3·46	8·65
187	11	3·62	8·70	September,	73	4	3·61	8·66
223	12	3·66	8·74	October,	73	—	3·76	8·72
190	21	3·56	8·76	November,	70	1	3·55	8·69
150	7	3·61	8·77	December,	72	1	3·59	8·75

Food and Drugs (Adulteration) Act, 1928.—This Act marks another stage in the process of codification of statute law (overgrown in recent years through legislation by reference), and, so far as Scotland is concerned, consolidates the provisions contained in no less than ten enactments, with their confusing cross-references, extending over fifty years.

It was noted that, in the Bill in its application to Scotland as originally drafted (Clause 35 (*j*)), proceedings in future "at the instance of the person who caused the analysis to be made" could only be taken in the Sheriff Court. Hitherto, these had, in terms of the 1875 Act, been invariably taken in the Stipendiary Magistrate's Court. As a result of a representation an amendment was accepted ensuring a continuance of the practice in vogue.

It may be remarked that the Act settles once and for all the vexed question of whether in the case of the retail sale of margarine the actual or outer wrapper should be marked. In terms of section 6, sub-section 3 (*c*), it is now enacted that the word "Margarine" shall be printed on the outside of such wrapper, or, if more wrappers than one are used, on the outside of the outermost wrapper. This co-ordinated and clarified presentation of the law in relation to adulteration, &c., should prove of great benefit to traders, as well as to those engaged in the enforcement of the statute.

Adulterated Irish Butter.—From time to time, unsatisfactory reports continue to be obtained upon samples of what are ostensibly genuine Irish butter. In 1926 the attention of the Scottish Board of Health was drawn to this in respect of samples of firkin butter containing excess water, consigned from the Free State. Again in the past year, a like occurrence was manifest in what is known as farmers' lump butter, consigned from Northern Ireland, in which the excess of water was as high as 9·57 per cent. It was also revealed that samples of this class of butter on two occasions contained foreign fat to the extent of 5 per cent. and 10 per cent. respectively. A detailed report of the facts and circumstances was submitted to the Board for their information and subsequent action.

Cream Cheese.—Of late a not infrequent practice has been to describe and sell as "Cream Cheese" a type of crustless cheese of Dutch manufacture, which was not even made from whole milk. It was put up in loaf shape, with tin-foil wrapping in imitation of a well-known proprietary brand of whole-milk cheese.

The commodity sold as "cheese" has no definite legal standard of composition other than that it must not contain any fat derived otherwise than from milk, although the Board of Agriculture possess power to make regulations thereon, under the Sale of Food and Drugs Act, 1899. On the other hand, the use of the prefix "cream" conveys to the ordinary purchaser that the cheese is of superior quality, and, at least, the product of whole or super-fatted milk, *e.g.*, cream. In view of the following analyses of two samples sold as such it appeared that a *prima facie* case was established and proceedings warranted.

	Sample No. 174. Per cent.	Sample No. 177. Per cent.
Fat, - - - - - - -	16·88	14 04
Protein, - - - - - -	24·82	22·51
Salt, - - - - - - -	5·52	5-89
Water, - - - - - - -	49·30	52·26
Acidity (as Lactic Acid), - -	1·35	1·35
	97·87	96·05
Reichert Wollny No. - -	29·0 c.c.	29·2 c.c.
Calculated Fat Content of Original Milk, - - - - - -	2·13 per cent.	1·98 per cent.

In the subsequent proceedings, a plea was tendered in the one case and a proof heard in the other, the defence in the latter being (1) that the commodity was not asked for nor sold as "cream cheese"; and (2) that as the legislature had not deemed fit to fix standards for cheese, or a definition or standard for cream, the conclusions of the Public Analyst were not warranted. At the conclusion of evidence the Stipendiary Magistrate adjourned the case to a later diet, and subsequently found the respondents guilty. As the case was of the nature of a test one, and the first of its kind in Scotland, a modified penalty of £1 was imposed.

Arsenic and Dye in Jam.—The examination of a sample of jam showed the presence of an inordinate quantity of an aniline dye, capable of staining any article brought into contact with it. The presence of arsenic to the extent of 1-40th of a grain per lb. was also disclosed. The jam was a special cheap line, prepared by a reputable firm of makers, and was being sold by a multiple dealer, from whose shops all stocks were forthwith called into store pending the examination of further samples. Three further control samples examined, while not disclosing artificial colouring matter in excess, showed in each instance the presence of arsenic, varying in extent from 1·5-100th to 2·8-100th of a grain per lb. As the recognised limit of arsenic in any food-stuff is 1-100th of a grain (1 in 700,000), the makers were communicated with, and samples of the ingredients used were obtained, with a view to tracing the arsenic content to its source. These consisted of (1) Dutch raspberry pulp, (2) corn syrup, and (3) four samples of aniline dyes. All were subsequently found to contain arsenic—in the pulp to the extent of 1-100th of a grain; in the corn syrup, 1-35th of a grain (1 in 245,000); and in the dyes from 1-20th of a grain (1 in 140,000) to ¼th of a grain (1 in 28,000). In the case of the dyes, as only one small teaspoonful in powder form is used per "boiling" of 200 lbs. (approximately) the dilution was such as to render negligible the proportion of arsenic due thereto. In the corn syrup, however, the amount present was deemed substantial, and was doubtless due to the use of insufficiently purified sulphuric acid in the inversion of the maize starch into syrup. These results were communicated to the firm in question in order that they could take the matter up with their suppliers with a view to the elimination of arsenic, and ensure that the corn syrup ceased to be used as an ingredient in jam making. All the jam called in was satisfactorily disposed of. The firm subsequently intimated their discontinuance of the use of corn syrup in their preserves, and stated that they were in touch with the firms supplying all ingredients used, for which, in each instance, they held a guarantee of purity.

Preservatives in Food.—As was anticipated, objections to these Regulations centred mainly upon the ban placed upon preserved cream and upon the addition of sulphites to mince.

Producers and traders had scarcely anticipated what would be the effect of the Regulations, so that in the early months of the year, when temperatures were unseasonal, considerable losses of cream by souring were known to have occurred. As a result of these, definite efforts to deal with the situation have since been made, such as (1) the more cleanly production of the original milk; (2) acceleration in marketing, including daily deliveries of supplies as required, in lieu of bi-weekly or weekly, formerly not uncommon; and (3) the employment of improved methods during transit and delivery. In the interval, however, it is feared many traders have ceased to deal in the commodity, while pastry bakers have had recourse to substitutes, such as "reconstituted cream," made from an emulsion of butter, dried milk, and water, or "synthetic cream." The control of these substitutes, which the Regulations have brought into being, is now receiving the consideration of the Government.

The quantity of cream produced within a reasonable distance of the city is negligible, supplies being mainly obtained from South of Scotland creameries and to some extent from Ireland and Holland. Accordingly, most supplies will, on arrival, be approximately 16 to

24 hours old. For its use by bakers in cakes, &c. (which constitutes the major portion of the trade in cream), and their subsequent distribution, sale, and consumpt, a further period of 24 to 36 hours may be necessary, when acidity will have become more or less marked and the cream no longer fresh. This aspect is one of very considerable importance, and the difficulties in the way of marketing of cream are worthy of investigation if this trade is to be preserved.

The butcher trade has not welcomed the restrictions on the use of sulphite preservatives in mince and sausages, no less than 29 prosecutions being necessitated during the year, compared with 12 in 1927. Penalties, amounting in all to £113, were imposed.

Appended is table of samples in which preservatives, &c., were found, and the nature and amounts.

ABSTRACT OF ARTICLES OF FOOD IN WHICH PRESERVATIVES, &C., WERE FOUND, AND THE NATURE AND AMOUNT DURING YEAR ENDING 31ST DECEMBER, 1928.

Nature of Article.	Number examined.	Number in which Preservatives, &c. were found.	Nature of Preservative, &c.	Parts per million. Lowest.	Parts per million. Highest.
Apricots (Dried),	1	1	Sulphur Dioxide,	992	—
Barley, - -	45	1	,, ,,	51	—
Butter, - -	691	1	Boric Acid, -	(Not estimated)	
Corn Flour, - -	9	3	Sulphur Dioxide,	12·8	76·8
Cream, - -	52	1	Boric Acid, -	0·11°/o	—
Figs, - - -	5	1	Sulphur Dioxide,	12·8	—
Fruit Salad, -	2	2	,, ,,	287	326
Green Peas, -	3	1	Sulphate of Copper,	1·238 grains per lb.	
Ham, - - -	18	1	Boric Acid,	0·08°/o	—
Meat (Glassed, Potted and Paste), -	19	1	Sulphur Dioxide,	230	—
Mince, - -	116	89	,, ,,	16	1,720
Mincemeat, - -	2	1	,, ,,	13	—
Orange Pulp, -	1	1	Boric Acid,	0·37 grains per lb.	
Pears (Dried), -	2	2	Sulphur Dioxide,	282	352
Prunes, - -	9	1	,, ,,	9 6	—
Sauce, - -	2	1	Benzoic Acid, -	86	—
Sausages, - -	53	45	Sulphur Dioxide,	50	1,332
Sausage Meat, -	3	3	,, ,,	224	403
Table Jelly, -	8	4	,, ,,	32	179
Wines (Non-alcoholic), -	8	5	Benzoic Acid,	317	520

Preservative Treatment of Citrous Fruits.—As there was reason to believe that oranges before export to this country were submitted to a process of treatment into which a boron preparation entered, a number of representative samples from all countries producing the fruit were obtained and examined. Opportunity was also taken to procure and submit samples of grape fruit to like examination.

The examination was made with reference to the surface of the peel, or skin, by dipping the fruit in a weak alkaline solution. All the samples were subsequently reported by the Corporation Chemist as showing the presence of boron preservatives (expressed in grains of boric acid per lb.) ranging from 0·01 (1-100th) to 0·17 (1-6th approximately). In the pulp of one sample of oranges examined 0·1 (1-10th) of a grain was found, but this quantity, it may be observed, is naturally present in citrous fruits, while in certain dried fruits the proportion may be as high as two grains per lb. As the peel or skin of no sample of oranges or grape fruit, so far examined, has been found entirely free, the Corporation Chemist, while at present inclined to be of opinion that what was obtained was probably due to treatment, is unwilling in the present state of knowledge to say, with express definiteness, how much (if any) was of the nature of an *addition* or was naturally present.

From what has been gleaned from inquiries at the "trade," it would appear that a process of treatment is more or less in universal use, with a view to the avoidance of development of mould.

It may be further observed that in an issue of the Bulletin of the Imperial Institute reference is made to what is termed the "Brogdex" process in the preparation and packing of oranges for transport. The process is described as consisting in the main of two parts—firstly, immersion of the fruit in a four per cent. solution of borax at 115°F., followed by drying; and secondly, subjection to a mist spray of paraffin wax. The first part of the process, it is said, cleanses the fruit and improves its appearance, while the second acts as a corrective to the removal of the oil by the earlier treatment, slows down the respiration of the fruit without entirely closing the pores, and protects any cuts on the skin. The process is said to be universal in California; to be in course of general adoption in South Africa and Australia; and to be the subject of patent rights owned by an American Company.

The facts as narrated were communicated to the Scottish Board of Health for their information.

Composition of Ice Cream.—An endeavour has been made in recent years to improve and standardise ice cream, particularly in regard to the percentage of milk fat and milk solids other than fat.

The Ice Cream Association has suggested a definition of "ice cream" or "cream ices" as a frozen product, containing not less than 8 per cent. of milk fat and 10 per cent. of milk solids other than fat, and that when the article is otherwise constituted, the commodity should be sold as "ices" or "custard ices." On 24th November, 1928, in the House of Commons, the Minister of Health stated that there was no prescribed standard of composition, and that it was not thought the circumstances warranted legislation.

In the manufacture of ice cream a binder or filler is almost invariably used, which is said to prevent the formation of ice-crystals in the subsequent freezing and to give a velvety texture to the finished product. Originally, cornflour was used for this purpose, but for many years has largely been superseded by a special preparation known as "ice cream powder." This, from analyses made of representative samples, is composed wholly of maize starch, plus a small addition of sago. In recent years, certain dealers have introduced a high quality article on American lines. The "mix" consists of milk, to which is added skimmed milk powder, unsalted butter, dextrose sugar, and a small percentage of gelatine as a coherent. The whole is thereafter pasteurised, homogenised, cooled to 40°F., and "aged" in holder vats for twenty-four hours before being frozen.

From the results of examination of 21 representative samples of ice cream taken during the year (table of analyses appended), it will be seen that ice cream varies widely in composition, particularly in relation to milk fat. The fat present in ice cream is not always derived from whole milk, dried or condensed milk, or butter. Proteins and carbohydrates, the other main constituents of milk, are also constituents of the coherent or filler. In the opinion of the Public Analyst, it is therefore impossible to determine from the analysis the composition of the original milk. In the case of samples Nos. 1,833, 3,104, and 3,570, these can be said to have been obviously from superfatted milk, while in others it would appear that skimmed milk alone was their origin.

ANALYSES OF TEST SAMPLES OF ICE CREAM.

Sample Number	Moisture	Mineral Matter	Fat	Milk Sugar	Cane Sugar	Proteins	Starch	Undetermined	
1,333	70·43	·39	2·08	3·06	17·38	1·85	4·81	—	100·00
1,334	72·04	·59	2·42	4·24	14·17	2·56	3·98	—	100·00
1,620	73·09	·65	2·85	4·19	11·39	2·87	4·96	—	100·00
1,621	68·77	·68	3·83	4·48	13·61	3·09	5·54	—	100·00
1,833	69·37	·57	9·59	3·53	11·13	3·09	Nil	2·72	100·00
3,085	70·21	·60	2·73	4·36	8·24	3·50	10·36	—	100·00
3,086	72·98	·61	1·28	4·11	8·81	3·21	9·00	—	100·00
3,087	72·02	·53	2·29	6·78	11·69	2·61	4·08	—	100·00
3,104	66·76	·80	8·09	4·82	11·93	4·18	Nil	3·42	100·00
3,332	67·92	·54	3·02	3·54	14·80	3·35	6·83	—	100·00
3,333	73·67	·61	3·24	3·77	8·72	3·30	6·69	—	100·00
3,334	71·44	·57	3·28	3·99	11·71	3·31	5·70	—	100·00
3,472	67·60	·69	0·20	6·38	12·92	2·98	9·23	—	100·00
3,569	71·99	·62	3·62	4·07	12·34	3·07	4·29	—	100·00
3,570	64·67	·73	12·33	9·24	8·86	4·10	·07	—	100·00
3,733	70·40	·61	2·66	3·97	15·14	2·73	4·49	—	100·00
3,734	70·45	·64	3·26	4·14	14·27	2·61	4·63	—	100·00
3,792	70·65	·73	2·78	4·38	13·39	3·18	4·89	—	100·00
3,793	65·71	·56	3·21	3·35	17·17	2·56	7·44	—	100·00
3,794	67·01	·68	3·31	4·49	18·62	3·06	2·83	—	100·00
3,839	71·86	·65	3·78	3·57	12·57	2·93	4·64	—	100·00

Condensed and Dried Milks, &c.—Twenty-four samples of different brands of the former and nine of the latter, as also a sample of prescription (humanised) glaxo, were examined, and found to conform to regulations.

The Amending Regulations of 1927 are now operative and further strengthen the principal regulations as to skimmed milk being "unfit for babies." It is now enacted (1) that there shall be a surrounding line enclosing the words "unfit for babies," the distance between any part of these words and said line to be not less than 1-16th of an inch; and (2) that where any tin or other receptacle containing skimmed milk is exposed or offered for sale in a paper or other wrapper, the words "unfit for babies" shall be printed on the outside of said wrapper, in similar display manner, in letters of not less than ¼ inch in height.

Milk (*Special Designations*) *Orders.*—The details of licences, as at end of 1928, with comparative figures for the two previous years, are as undernoted :—

	1928	1927	1926
Certified—			
Producers, ...	1	1	1
Dealers, ...	40	34	25
Total Average Daily Sales (Gallons), ...	106	130	95
Grade "A" (Tuberculin Tested)—			
Producers.	—	—	—
Bottling Establishments, ...	4	4	2
Dealers, ...	257	220	137
Total Average Daily Sales (Gallons), ...	955	940	730
Grade "A"—			
Producers.	—	—	—
Bottling Establishment, ...	1	1	1
Dealers, ...	47	43	37
Total Average Daily Sales (Gallons), ...	*420	†445	‡425
Pasteurised—			
Pasteurising Establishments, ...	2	3	3
Dealers, ...	16	15	12
Total Average Daily Sales (Gallons), ...	540	670	500

* 400 Gallons were pasteurised.
† 425 " "
‡ 400 " "

During the year a total of 256 samples of designated milks were procured and examined as to their conformity with the above Orders; a tabular statement of the results is appended.

RESULTS OF EXAMINATIONS OF DESIGNATED MILKS.

Designation and Requirements	Number examined	Agar Count per c.c.					Coliform Bacilli		Fat Minimum (3·5 %)		Average Fat Content
		Number conform to count	Number exceeding count	Lowest	Highest	Average of Total Samples	—	+	Number above	Number below	
CERTIFIED— Bacteria not to exceed 30,000; Coliform absent in $\frac{1}{10}$ c.c.; Fat not less than 3·5 per cent.	65	64	1	400	202,850	8,794	55	10	63	2	% 4·00
GRADE "A" (Tuberculin Tested)— Bacteria not to exceed 200,000; Coliform absent in $\frac{1}{100}$ c.c.; Fat not less than 3·5 per cent.	148	145	3	700	3,080,000	46,427	130	18	118*	23	3·84
GRADE "A"— Requirements are as for Grade "A" (Tuberculin Tested).	11	9	2	20,000	1,888,000	264,809	9	2	9	2	3·66
GRADE "A" (Pasteurised)— Requirements are as for "Certified."	12	12	—	600	25,000	4,217	11	1	12	—	3·67
PASTEURISED— Bacteria not to exceed 100,000 (No Coliform test prescribed.)	20	19	1	3,800	115,000	22,910	11	9	(None prescribed)		3·59

* 7 samples were not examined as to fat content.

The confusing nature of the present official designations remains, and Grade "A," or third grade, is not infrequently misleadingly quoted, and recommended even by medical men, as the highest. "Certified Milk" has thus laboured somewhat under a handicap. This, coupled with its increased cost, has tended to raise its production and sale into the category of a luxury trade. It will be observed that, while the total number of dealers shows a slight increase, the total gallonage as regards sales shows a decrease. It would, therefore, appear as if a position of stalemate, if not of actual retrogression, so far as a demand by the public for milks of designated qualities generally is concerned, had set in.

Owing to unsatisfactory counts—one million and three millions being obtained on two occasions—in samples as distributed from a Grade "A" (Tuberculin-Tested) bottling establishment in an adjoining county, the revocation of the licence was considered by the District Committee. It was, however, agreed to suspend action conditionally on the elimination of certain supplies, and the simplification of the processes in use in course of bottling. This was attended with satisfactory results, as disclosed in the examination of subsequent samples, and further cause for complaint has not arisen. One licensed dealer in Grade "A" (Tuberculin-Tested) milk was found making re-use of bottles marked Grade "A" (Tuberculin-Tested) in the distribution of ordinary milk, and in terms of Article 10 his licence as a dealer in designated milks was revoked.

Designated Milk Supplies to City Hospitals.—Appended is an analysis of results of the bacteriological and chemical examination of samples obtained from producers' supplies as delivered to the city hospitals for the first completed year thereof.

ABSTRACT OF RESULTS OF EXAMINATION OF DESIGNATED MILKS AS SUPPLIED TO HOSPITALS FOR YEAR ENDING 31st DECEMBER, 1928.

		Examined as to Count and Coliform.								Examined as to Fat. Minimum—3·5 %			
Consignor.	Grade.	Number Examined.	Number Conform to Count.	Number Exceeding Count.	Lowest.	Highest.	Average of Total Samples.	Coliform Bacilli.		Number Examined.	Number above.	Number below.	Average Fat Content.
Grade "A" (T.T.)								−	+				%
M ,	,,	52	51	1	1,050	59,200	11,481	51	1	104	95	9	3·89
G.	,,	6	6	...	4.350	12,700	7,233	6	...	12	11	1	3·98
W. L.,	,,	11	10	1	6,400	1,062.000	127,909	6	5	32	26	6	3·77
W. A ,	,,	18	18	...	2,150	160,050	16,717	14	4	37	37	...	3·91
S.,	,,	28	26	2	5,700	1.026,000	101,228	22	6	58	55	3	3·75
K. (B.),	,,	43	40	3	1,200	1.368,000	90.746	30	13	87	82	5	4·00
K. (A.),	,,	47	44	3	2.850	228.600	34,677	46	1	102	89	13	3·74
D.,	,,	10	10	...	2.550	33.000	13,825	10	...	29	19	10	3·73
J.,	,,	6	6	...	7.400	24,550	15.941	5	1	20	20	...	4·12
L.,	,,	8	8	...	5,100	141,000	40,850	7	1	34	32	2	3·88
P.,	Certified	52	51	1	700	70.100	6.279	41	11	103	102	1	3·97
D.,	,,	31	27	4	800	55.800	10,406	26	5	69	64	5	3·90

Tubercle, &c., in Milk.—For the detection of tubercle and estimation of bacterial count, a total of 201 samples of raw milk as consigned from farmers to city dairymen were procured and examined. In eight samples, the presence of tubercle was disclosed, equivalent to 3·98 per cent., compared with 1·97 per cent. in 1927. The officials of the producing areas were forthwith notified, and in five farms a total of six affected cows were reported as having been found and subsequently slaughtered, in terms of the Tuberculosis Order. In three cases the ultimate results of the inspection, &c., of the herds were reported as attended with negative results. Repeat samples of the consignments were subsequently taken, and all found negative.

With respect to the bacterial counts of the samples, the following table shows the results thereof :—

STATEMENT OF RESULTS OF EXAMINATION FOR BACTERIA OF FARMERS' SUPPLIES AS RECEIVED BY DAIRYMEN.

	Average Number of Bacteria per c.c.					Coliforms in $\frac{1}{100}$ c.c. (2 days)	
Number examined	Under 100,000	100,000 to 200,000	200,000 to 500,000	500,000 to 1,000,000	Over 1,000,000	—	+
201	135	19	20	11	16	129	72

A consideration of the above table shows that 76 per cent. of the total were within the limits of Grade "A" quality as regards bacterial count, compared with 64 per cent. in 1927.

Of the 135 samples containing less than 100,000 bacteria per c.c. (equal to 67 per cent., as against 50 per cent. in the previous year), 87 of these, or 64 per cent., were equal to "Certified" quality.

With regard to the presence or absence of coliform bacilli, as shown on the table, 64 per cent. of the total samples, it may be observed, were found negative, compared with 61 per cent. in 1927. On the whole these results may be deemed the most satisfactory yet attained.

The Misuse of Aerated Water Bottles.—From time to time complaints are received as to nausea and vomiting, and, in some instances, pronounced illness due to the consumption of aerated waters, which have subsequently been found to contain traces of various coal-tar derivatives, or paraffin, or petrol. This contamination is readily perceptable to the sense of smell. In every instance these complaints have been associated with the type of bottle having a vulcanite screw stopper, with rubber seating, which thus lends itself readily for use by unthinking persons for other than legitimate purposes. Despite the care taken in the filling factories to detect such "returns" and to ensure the destruction of bottle and stopper forthwith, there must occasionally—having regard to the human element and the varying sense of smell possessed by the employees upon whom this duty devolves—be some which escape detection and elimination. While the subsequent cleansing is such as to practically ensure the complete purification of the bottles, this cannot be said of the stoppers, so that when re-used, the contamination is retained in the rubber. Short of such treatment as would destroy the resiliency of the latter, and render the stopper inefficient, this danger must always be present. Apart altogether from this aspect, the re-use of a stopper in connection with the bottling of potable liquors is, in any case, unhygienic. In other countries their use is entirely proscribed, and crown corks alone permitted. It is just here where the Ministry of Health, after due inquiry, could issue such a regulation in terms of the Public Health (Regulations as to Food) Act, 1907, Section 1 (1), viz., as to "measures to be taken for the prevention of danger arising to public health from the . . . preparation and distribution of articles of food or drink . . . ," and there is every reason to believe that this would be welcomed by the bottling trade generally.

Merchandise Marks Act, 1926.—As a result of inquiries held by the Standing Committee appointed for the purposes of the Act, a number of imported food-stuffs were recommended for marking. Orders in Council in relation to several of these were recently made; those issued to date and the commodities affected, with date of operation, are as under:—Fresh Apples, 13th November, 1928; Honey, 13th January, 1929; Dried Eggs, 21st March, 1929; Eggs in Shell, 21st April, 1929; Currants, Sultanas, Raisins, and Oat Products, 21st June, 1929.

The following briefly summarises their main provisions with regard to marking as they affect retailers principally:—

Fresh Apples.—Container, or label securely attached, to bear indication of origin thereon in ½-inch letters, and on exposure for sale by retail, by show ticket in like type. On sales of 14 lbs. or less the container (or bag) need not be marked.

Honey.—Container, or label securely attached, to bear indication of origin in 1-8th or 1-12th inch letters, according to size of package. Special provisions are made in regard to the marking of blends or mixtures.

Currants, Sultanas, and Raisins.—When not prepacked on retailer's premises, to bear show ticket in ½-inch letters; when prepacked otherwise, package or label affixed to be marked in 1-8th or 1-12th inch letters, according to size of package. Sales of 14 lbs. or less and packages made up on premises are exempt.

Eggs in Shell.—Every egg (hen or duck) to be conspicuously and durably marked in ink on shell in letters of not less than two millimetres in height.

Dried Eggs.—Container, or label securely attached, to bear indication of origin in 1-8th or 1-12th inch letters, according to size of package.

Oat Products.—When not prepacked to bear show ticket in ½-inch letters. When prepacked after importation, package, or label securely attached, to be marked in 1-8th or 1-12th inch letters, according to size of package, or by means of show ticket. On sales of 14 lbs. or less the container (or bag) in which the sale is made need not be marked. Special provisions are made in regard to the marking of blends or mixtures.

Agricultural Produce (Grading and Marking) Act, 1928.—This Act provides for the grading of agricultural produce, the prescribing of grade designation marks indicative of qualities, and the approval of grading and packing centres for this purpose as the Department of Agriculture may elect. Special provision is made in relation to eggs that have been subjected to any process of preservation—to operate as from 28th February, 1929. As it has not been deemed possible to ascertain by analysis whether eggs have, in fact, been preserved by cold or chemical storage, an Order has been made exempting eggs so preserved, and limiting its application to eggs preserved by methods such as immersion in lime-water, water-glass, or oil. Any egg so preserved is required from above date to be marked on shell "preserved" in 1-16th inch letters within half-inch diameter circle.

Provision is also made for registration with local authorities of premises used for the cold or chemical storage of British eggs, and for their marking—in the case of the former, either "chilled" or "cold stored" and, in the latter, "sterilised" before removal therefrom. The operation of this provision is to synchronise with the coming into force of the Order in Council under the Merchandise Marks Act, 1926, requiring an indication of origin on all imported eggs, namely, 21st April, 1929.

Butter and Margarine Acts.—During the year, six applications for registration as wholesale dealers in margarine and one in respect of premises to be used as a butter factory were received. All were found, or put into conformity with, the statutory requirements, and duly certificated. As hitherto, periodic inspection and sampling in butter factories were made, but nothing of an untoward nature was found during the year. The class of premises to which these Acts apply, and the number at present on the register, are as under :—

Manufactories of Margarine, ...	—
Wholesale Dealers in Margarine, ...	278
Manufactories of Milk blended Butter, ...	—
Butter Factories, ...	18

Fertilisers and Feedings Stuffs Act, 1926.—This Act became operative as from 1st July, 1928, and repeals the Act of 1906. In terms of Sections 11 and 17, respectively, the appointment of official samplers, the fixing of fees exigible in respect of analyses, and the taking of samples at the request of purchasers have been duly made. Exhaustive regulations have been issued in connection with methods of sampling and analysis, and the limits of variation permissible from those contained in statutory statement. No request for an official sampling and analysis was received during the year, but a total of 32 samples were otherwise obtained and examined.

In eight samples the analyses revealed minor deviations from the requirements of the Act, and these, in each instance, were communicated to both buyer and seller.

Food Inspections, &c.—During the year, 14,634 inspections were made in markets, shops, and stores, in connection with the detection of unsound or unwholesome food and the oversight of condition of storage, sale, &c. A total of over 95 tons of various food-stuffs were adjudged by the inspectors to be unfit for human food, and were destroyed or so dealt with as to preclude their use for human consumption.

In terms of the Public Health (Meat) Regulations (Scotland), 1924, Article 12, one new application was received for certification of storage accommodation, and, upon a satisfactory report thereon, was placed on the register. During the year, two holders of certificates ceased to carry on the business of dealers in meat food products. The premises at present on the register—nine in number—continue to be satisfactorily conducted, certification for the current year being renewed, together with 44 copy certificates in connection with trading vehicles.

In connection with the supervision of premises used for the storage or sale of food-stuffs, improvement in the maintenance of a reasonable degree of cleanliness continues to be noted, and a readiness of occupiers to co-operate therein evinced. In one instance, the institution of proceedings was necessary, and a fine of £1 was imposed.

Fraudulent Food Advertisement.—A somewhat unusual form of food fraud came under notice; a firm of alleged food manufacturers with offices and works in Glasgow were, by advertisements in the press, inviting applications for "home-work" in the canning of fruits and vegetables, plant and material being supplied with instructions, and guaranteeing handsome profits on sales, on payment of an initial fee of three guineas. The "offices" were found to consist of a small single shop—with window obscured—to which access could not be obtained, despite several visits, and to all intents and purposes the premises appeared to be merely used as a place of call. From such scrutiny of the interior as could be obtained, the sole contents consisted of what appeared to be boxes of stationery. The alleged "works" were further found to have no existence. The facts were communicated to the Criminal Investigation Department for their consideration. The premises were vacated shortly thereafter, and it was subsequently learned that the occupier had been previously convicted of charges of fraud of a similar nature.

Milk and Dairies (Scotland) Order, 1925.—The use of bottles, other than their own, by dairymen continues to be somewhat pronounced, and it is the principal breach of the Order now falling to be dealt with, the meagreness of the penalties imposed not being sufficient deterrent. To facilitate the return and non-use of bottles other than own, a bottle exchange was established by the trade over two years ago, so that no cogent reason exists for offences of this nature.

Nine offences of this kind were dealt with during the year, and penalties of £12 10s. in all imposed. A common carrier collecting milk from farmers for delivery to city dairymen was found conveying bales of rags on the same vehicle. Proceedings were taken under Article 8, and a penalty of £2 imposed.

Dairies.—The total number of " dairies " on the register, in terms of the Milk and Dairies (Scotland) Act, 1914, at the end of the year was 1,659, as against 1,628 in 1927, being an increase of 31. Of these, 284 were in respect of limited registration restricting conditions of trading to the reception and sale of bottled milk only.

22,571 inspections of dairy premises were made, in connection with which 23 contraventions of the bye-laws were disclosed. The necessity for legal proceedings arose in only one instance in connection with the temporary storage of milk intended for sale in dwelling-house, a penalty of £2 being imposed.

The name of a dairyman, against whom proceedings for the misuse of bottles had failed to be effective, was removed from the register, as he was deemed an unsuitable person to carry on the trade of a dairyman in terms of Section 6 *(a)*.

The new draft bye-laws, which it was contemplated would have been operative ere this, have necessitated considerable negotiations, and are still under review by the Board, but their approval in final form is now early expected.

Byres.—Byres for milch cows within the city area at the end of the year numbered 52, showing a further decrease of two, compared with 1927. The premises and cows and conditions of production continue to be maintained in a satisfactory manner. A total of 529 inspections of byres were made, the number of cows allowed therein being 1,199 and the average number kept 957.

The details of occupancy are as under :—

City Byres as at 31st December, 1928.

	With Grazing Facilities			Wholly Stall-Fed		
Cubic space per Cow	No. of Byres	No. of Cows Allowed	Average No. kept	No. of Byres	No. of Cows Allowed	Average No. kept
At 600 cubic ft.,	49	1,143	906	1	21	16
At 800 ,,	2	35	35	—	—	—
Totals,	51	1.178	941	1	21	16

Ice Cream Shops.—Dealers in ice cream on the dairy register at 31st December, 1928, in terms of the Glasgow Corporation Order Confirmation Act, 1919, numbered 602, as against 598 in 1927, being an increase of four.

9,397 inspections of premises, &c., were made, and eight contraventions of the bye-laws were noted, in none of which was further action necessary.

A. B. FINDLAY,
Senior Food Inspector.

14th March, 1929.

THE SALE OF FOOD AND DRUGS ACTS.

TABLE SHOWING NATURE AND NUMBER OF TOTAL SAMPLES PROCURED AND EXAMINED DURING 1928.

Nature of Sample	Informal		Statutory	
	Number procured	Number non-genuine	Number procured	Number non-genuine
Alum,	1	—	—	—
Apricots, canned,	1	—	—	—
Apricots, dried,	1	—	—	—
Arrowroot,	5	—	6	—
Bacon,	1	—	4	—
Barley,	33	1	12	—
Boracic Powder,	2	—	—	—
Borax, purified,	6	—	4	—
Brandy,	4	—	—	—
Butter,	609	13	82	4
Cascara Sagrada,	7	—	—	—
Cheese,	32	—	18	—
Chocolate,	3	—	—	—
Cinnamon, ground,	10	—	20	—
Cocoa,	11	—	2	—
Cod Liver Oil Emulsion,	1	—	—	—
Coffee,	16	—	8	—
Corn Flour,	5	—	4	—
Cream,	43	4	9	—
Cream Cheese,	7	—	2	2
Cream Filling,	1	—	—	—
Cream of Tartar,	23	—	10	—
Currants,	1	—	—	—
Custard Powder,	6	—	1	—
Dripping,	21	—	14	—
Epsom Salts,	1	—	—	—
Figs,	2	—	3	—
Fish Paste,	4	—	—	—
Flour,	—	—	1	—
Flour, S.R..	6	—	13	—
Flowers of Sulphur,	3	—	3	—
Fruit Salad,	2	—	—	—
Gin,	13	1	—	—
Ginger, ground,	5	—	15	—
,, preserved,	—	—	1	—
Glacé Cherries,	1	—	—	—
Gregory's Mixture,	10	—	—	—
Ham,	14	1	4	—
Health Salts,	1	—	—	—
Honey,	4	—	—	—
Ice Cream,	21	—	—	—
Ice Cream Powder,	3	—	—	—
Lard,	23	—	18	—
Lemon Squash,	—	—	1	—
Lime Water,	6	—		—
Linseed, Crushed,	3	—	2	—
Liniment of Turpentine,	4	—	—	—
Lime Juice Cordial,	5	—	—	—
Liquorice Powder.	4	—	—	—
Macaroni.	1	—	—	—
Margarine,	8	—	26	—
Meat, glassed,	7	—	—	—
Meat, potted,	8	—	—	—
Meat, paste.	3	1	1	—
Milk Pudding,	1	—	1	1
Milk, condensed,	21	—	—	—
Milk, dried,	9	—	—	—
Milk, evaporated,	3	—	—	—
Milk, skimmed,	8	—	10	2
Milk, sweet,	2401	235	848	57
Mince,	73	40	43	31
Mincemeat,	2	—	—	—
Mustard,	8	—	3	—
Oatmeal,	1	—	3	—
Oil, almond,	2	—	—	—
Oil, camphorated,	36	2	4	—
Oil, castor,	4	—	—	—
Oil, cod-liver,	2	—	—	—
Oil, eucalyptus,	4	—	3	—
Oil, olive,	19	—	5	—
Ointments, various,	20	3	1	1
Orange Drink,	1	—	—	—
Orange Pulp,	1	—	—	—
Paregoric,	4	1	—	—
Pears, dried,	1	—	1	—
Peas, canned,	1	—	2	1
Pepper, black,	5	—	5	—
Pepper, compound,	—	—	1	—
Pepper, white,	23	1	32	2
Prescription Glaxo,	1	—	—	—
Preserves,	21	1	2	1
Prunes,	5	—	4	—
Raisins.	1	—	10	—
Rice, ground and whole,	1	—	11	—
Rum,	40	2	2	—
Sauces, various,	2	—	—	—
Sausages,	45	4	8	3
Sausage Meat,	2	1	1	—
Semolina,	1	—	—	—
Sponge Cake,	6	—	—	—
Suets, various,	5	—	7	—
Sugars, various,	—	—	3	—
Sultanas,	1	—	—	—
Sweet Spirit of Nitre,	2	—	—	—
Table Jelly.	8	—	—	—
Tapioca,	4	—	2	—
Tartaric Acid.	13	—	4	—
Tea,	4	—	4	—
Tincture of Iodine,	4	—	2	—
Treacle,	2	—	—	—
Vinegar,	2	—	5	—
Whisky,	63	12	19	1
Wines, Alcoholic,	2	—	—	—
Wines, Non-Alcoholic.	5	—	3	—
Grand Totals,	3902	323	1333	106

The Sale of Food and Drugs Acts.

Details of Samples in which Proceedings were Initiated during Year 1928.

Number of Complaints	Nature of Sample and Alleged Offence	Number of Convictions	Amount of Fines imposed			Number Dismissed or found Not Proven	Number Deserted Simpliciter	Number Withdrawn and Expenses Paid	Amount of Expenses Paid	
			£	s.	d.				£	s.
8	Sweet Milk—Deficient in Milk-Fat, ...	8	48	0	0	—	—	—	0	0
3	Sweet Milk—Deficient in Milk solids other than Fat, ...	3	14	0	0	—	—	—	0	0
1	Skimmed Milk—Deficient in Milk solids other than Fat, ...	1	3	0	0	—	—	—	0	0
2	Butter—Contained Fat other than Milk-Fat,	2	7	0	0	—	—	—	0	0
1	Butter—Contained excess Water, ...	—		—		1	—	—	0	0
4	Margarine—Failing to label, ...	4	12	0	0	—	—	—	0	0
1	Margarine—Failing to use the statutory wrapper, ...	1	1	0	0	—	—	—	0	0
2	Cream Cheese—Prepared from partially Skimmed Milk, ...	2	11	0	0	—	—	—	0	0
1	White Pepper—Contained Rice Starch, ...	1	2	2	0	—	—	—	0	0
1	Whisky—Contained excess Water, ...	1	2	0	0	—	—	—	0	0
1	Green Peas—Contained Copper Compounds,	1	2	10	0	—	—	—	0	0
1	Calamine Ointment—Calamine replaced by Chalk, ...	1	2	0	0	—	—	—	0	0
3	Sausages—Contained excess of Preservatives, ...	3	10	0	0	—	—	—	0	0
24	Mince—Contained Preservative during proscribed period, ...	24	94	0	0	—	—	—	0	0
2	Mince—Contained excess of Preservatives during permitted period, ...	2	9	0	0	—	—	—	0	0
55		54	217	12	0	1	—	—	0	0

ABSTRACT OF PROCEEDINGS UNDER OTHER THAN THE ABOVE ACTS.

Act, Order, or Regulation	Nature of Offence	Number of Complaints	Number of Convictions	Amount of Fines Imposed £	s.
Glasgow Police Act, 1866, ...	Failing to cleanse food premises, ...	1	1	1	0
Dairy Bye-Laws, ...	Storing milk in dwelling-house, ...	1	1	2	0
Milk and Dairies (Scotland) Order, 1925 (Art. 8),	Conveying other than milk on vehicle, ...	1	1	2	0
Milk and Dairies (Scotland) Order, 1925 (Art. 12),	Using milk bottles other than own, ...	9	9	12	10
		12	12	17	10

AIR PURIFICATION—SMOKE ABATEMENT.

The past year was a normal one of steady progress in the diminution of smoke from industrial furnaces, consequent on the gradual introduction of better appliances for smoke prevention, together with the application of an improved technical skill in the stoking of hand-fired furnaces. Such results naturally follow on thirty years of steady administrative work in relation to smoke abatement, combined with thirteen years of teaching the principles of combustion to the firemen who are responsible for the actual stoking of furnaces.

An illustration of what can be done towards smoke prevention, when those concerned take up the matter in earnest, is afforded by a large biscuit and cake baking establishment in the Anderston district of the City. In former years this firm appeared too frequently in the list of prosecutions for smoke offences, but when a direct approach was made to the Chairman of the Company he caused reconstruction to be undertaken, so that within two years six large biscuit baking ovens with twelve bituminous coal-fired furnaces were taken out and an equivalent number of gas-heated ovens installed, as well as a new and more modern steam boiler. As a result of these changes, of two very smoky chimneys, one is now entirely smokeless, while the other, which is connected with the steam boiler, is very much improved.

Another notable instance of progress is that of a large firm of carpet manufacturers, who have transformed their entire steam-producing plant at their various factories within the City. Formerly steam boilers were hand-fired with high-priced bituminous fuel and recurring issues of excessive smoke led to frequent prosecution. The firm have now installed large modern steam boilers, fitted with all the latest equipment for burning fuel which, though small and cheap, has a comparatively high calorific value. Results have been most satisfactory, both as regards the cost of steam production and the absence of smoke from the chimneys.

The following is a summary of the work of the Smoke Inspection staff during the year :—

Number of inspections of steam boilers and other furnaces, ...	1,453
Number of observations of chimneys, ...	28,491
Number of intimations of excess smoke given.	344
Number of warning notices given, ...	26

Prosecutions.—During the year 57 prosecutions were taken before the Stipendiary Magistrate at the Central Police Court against smoke offenders. Of these, 53 were convicted, and fines aggregating £61 0s. 6d. were imposed. In one case, where proceedings had been instituted in respect of a fourth offence, the decision was "Not Proven."

Of the 53 convictions, 36 were for first offences, with an average fine of 21s. 2d.; 7 were for second offences, with an average fine of

34s. 3d.; 8 were for third offences, with an average fine of 55s.; one was for a fourth offence, with a fine of 40s.; while the remaining one was for a fifth offence, with a fine of 40s.

In five cases, proceedings were withdrawn on an undertaking being given by the offenders to improve their furnace plant, while in another case no action was taken, as the excessive issue of black smoke was consequent on an accident.

Improvements.—In the Report for the year 1927, a summary table was given of the improvements effected during the twenty-nine years in which the Health Committee had been dealing with smoke offences. The following continues the record for the past year:—

Number of new steam boilers installed. to give increased power,	13
Number of mechanical stokers fitted to steam boiler furnaces, ...	7
Number of secondary air smoke preventing appliances fitted to steam boilers, ...	4
Number of furnaces in which anthracite, coke, or other non-bituminous fuel has been substituted for ordinary coal, ...	11
Number of furnaces adapted for smokeless combustion of oil fuel.	3
Number of steam boilers replaced by electric motors (using Corporation power), ...	13
Number of furnaces, formerly coal-fired, reconstructed for use of gas, ...	9
Number of new chimneys erected, or existing chimneys heightened to give increased draught to carry gas higher, ...	8
Number of improvements to furnaces not coming under any of the above headings, ...	8

Complaints.—A number of complaints were received during the year of smoke nuisances from low chimneys in the immediate vicinity of dwelling-houses. In practically every instance remedial measures were taken to stop the nuisances, most of which arose from smoke issuing from short heating-furnace chimneys, or from slow-combustion stoves or open fires in workshops.

Sectional Water Heaters.—Sectional boilers for central heating are primarily designed to burn char or anthracite coal, which gives smokeless combustion, but when burning bituminous fuel they are prolific smoke producers. Many of the complaints received during the year referred to excessive smoke from such furnaces. In many cases the chimneys are too short to give sufficient draught to burn char. In other cases the boiler is too small to satisfy the heating requirements when burning char. With sectional heaters of sufficient capacity and adequate draught, coke, when skilfully used, with its strong radiant heat, is quite suitable and gives smokeless combustion.

Steam Wagons.—The steam wagon still figures prominently in the prosecutions for smoke offences, 31 users of these vehicles having appeared in the Police Court during the year, notwithstanding the fact that an appeal was made to owners by circular letter early in the year to substitute a low volatile fuel for the ordinary coal generally used. In some cases this has been done with satisfactory results, but there are still a considerable number of steam wagons using ordinary coal, and, until a fuel of low volatile content is more generally used, or is made compulsory in these vehicles, this source of nuisance will remain.

Tar Melters.—There were only two prosecutions against users of these appliances during the year, and as gas coke is now more generally used and gives sufficient heat for melting pitch without producing smoke this part of the smoke problem is now well under control.

Automatic Filters.—In April five automatic filters were introduced for determining the density of soot particles in the atmosphere. They are located throughout the City as follows:—

Central—Chemical Laboratory, 20 Trongate;
North—Maryhill Police Office, Gairbraid Avenue;
South—Queen's Park Police Office, Craigie Street;
West—Govan Police Office, Albert Street; and
East—Belvidere Hospital, London Road.

They are placed near a window, through which a pipe projects. The instrument, by means of syphonic action, aspirates two litres of air through the pipe, which filters through a paper disc held in position by a clock handle and pin. The soot particles in the sample of air are deposited on the paper disc, and the air pressure after syphonic action releases the disc, which then moves round the requisite distance, and is held fast by the pin in readiness for the next operation. The scale of densities ranges from zero to 20, and any reading over four indicates the presence of fog in the atmosphere.

The maximum shade recorded since the gauges were introduced was in January, 1929, which was a foggy month. Taking the mean figures for the month of June as representing normal conditions and the mean of the readings for the first three days in January, 1929, when industrial smoke was at a minimum, the following comparison indicates the extent of smoke pollution by domestic and office chimneys when combined with fog, viz.:—

District.	Mean of Readings for Month of June, 1928.	Mean of Readings for First Three Days in January, 1929.
North,	1·71	8·6
East,	1·85	15·0
South,	1·89	14·6
Central,	1·99	20·0
West,	2·17	17·0

The daily minimum reading for January, 1929, for all stations was 3.

Soot Collecting Gauges.—The dust and soot fall from the atmosphere during 1928, as indicated by the nine rain deposit gauges located at the nine collecting stations, was 296·85 tons per square mile, as against 317·44 tons for the previous year. This shows a decrease of 20·59 tons for the year, but, taking the average for the past six years, viz., 283·06 tons, there is an increase of 13·79 tons. Comparing the six summer months with the six winter months, the deposit is heavier by 30·25 tons. This is accounted for by the heavier rainfall during the winter months, as will be seen from the table appended hereto.

Smoke Abatement Classes.—The classes for instruction of steam boiler firemen and others in the principles of coal combustion and furnace management, held under the auspices of the Scottish Section of the Smoke Abatement League of Great Britain, were continued during the session 1928-29. Two classes were carried on, at each of which twelve lectures were given. In January, 1929, the Lecturer, Mr. Colin B. Park, Senior Smoke Inspector, took ill, and the classes were postponed for three weeks, but as he was still unable to resume teaching, Mr. Alexander Gunn, Assistant Smoke Inspector, completed the course. Mr. Park died on 5th March, having served the Department conscientiously for a period of thirty years.

56 students enrolled—18 left having not more than four attendances; 38 made a sustained attendance, of whom 21 qualified for full attendance certificates. The average attendance was 72·3 per cent. To the written examination held at the close of the session, 13 men came forward to compete for the class prizes, and to qualify for merit certificates. These certificates are given to those who gain 70 per cent. of marks, and of the number who entered 12 exceeded that standard. The prizes and certificates will be presented at a social meeting convened by the Scottish Section of the Smoke Abatement League to be held in May.

Glasgow, April, 1929.

Average Deposit of each Element of Atmospheric Pollution for each Month of 1928.

English Tons per Square Mile

	Month	Rainfall in Millimetres	Insoluble Matter				Soluble Matter			Total Solids for 1928	Included in Soluble Matter			Total Solids for 1927	Total Solids for 1926	Total Solids for 1925	Total Solids for 1924	Total Solids for 1923	Total Solids for 1922
			Tar	Carbonaceous other than Tar	Ash	Total Insoluble Matter	Loss on Ignition	Ash	Total Soluble Matter		Sulphates as (SO_3)	Chlorine as (Cl)	Ammonia as (NH_3)						
Mean of 9 Stations,	Jan.,	145·11	·27	4·30	8·79	13·36	8·01	12·76	20·77	34·13	6·18	2·01	·62	26·63	23·57	24·16	23·22	19·76	22·12
,, 9 ,,	Feb.,	110·87	·27	2·81	4·73	7·81	6·78	11·49	18·27	26·08	4·21	3·86	·69	21·60	19·32	19·99	14·12	20·44	17·84
,, 9 ,,	Mar.,	73·23	·16	3·98	7·35	11·49	4·93	8·16	13.09	24·58	4·27	1·48	·68	18·58	21·48	17·28	22·07	13·72	14·10
,, 8 ,,	April,	24·68	·20	3·22	8·82	12·24	1·71	4·08	5·79	18·03	2·36	·52	·18	24·85	18·63	26·02	25·97	21·21	21·87
,, 7 ,,	May,	55·71	·22	4·89	9·04	14·15	4·69	5·72	10·41	24·56	3·69	·51	·35	22·17	20·97	28·75	31·94	21·39	19·17
,, 8 ,,	June,	103·28	·18	5·73	9·21	15·12	4·86	8·43	13·29	28·41	4·28	·84	·08	31·25	19·92	15·98	20·88	17·90	22·02
,, 8 ,,	July,	55·93	·07	4·58	6·79	11·44	3·24	6·29	9·53	20·97	2·68	·66	·23	26·87	29·90	23·04	28·65	36·81	19·45
,, 7 ,,	Aug.,	72·80	·17	4·27	8·11	12·55	3·88	6·65	10·53	23·08	3·35	·49	·41	54·45	20·79	23·22	21·33	33·65	26·76
,, 9 ,,	Sept.,	71·86	·05	2·83	6·57	9·45	2·84	5·96	8·80	18·25	3·15	·47	·36	25·16	19·82	18·40	24·32	25·16	20·37
,, 9 ,,	Oct.,	124·73	·15	4·81	7·80	12·76	5·91	12·61	18·52	31·28	5·28	3·07	·85	32·86	22·38	24·17	26·51	31·71	13·76
,, 9 ,,	Nov.,	105·63	·12	3·20	6·69	10·01	7·34	6·50	13·84	23·85	3·52	2·04	·36	19·90	39·94	14·30	23·86	29·81	19·19
,, 9 ,,	Dec.,	94·47	·28	3·61	6·76	10·65	5·71	7·27	12·98	23·63	4·22	1·47	·53	13·12	19·16	36·30	19·78	38·00	24·57
Yearly deposit in Tons per square mile, ...		1,038·30	2·14	48·23	90·66	141·03	59·90	95·92	155·82	296·85	47·19	17·42	5·34	317·44	275·88	271·61	282·65	309·56	241·22
Monthly Mean of all Gauges, ...		86·52	·18	4·02	7·55	11·75	4·99	8·00	12·99	24·74	3·93	1·45	·44	26·45	22·99	22·63	23·55	25·80	20·10

GENERAL SANITARY OPERATIONS.

DOMESTIC WASHING HOUSES.

Towards the close of 1921 a survey of properties in certain areas of the City was taken in order to ascertain the extent to which domestic wash-house accommodation was either actually absent or was in such condition as to be unusable. At that time it was found that there were:—

Properties without Wash house Accommodation, ...	1,717
Properties whose Wash-houses were dilapidated and unusable, ...	1,122

This condition was regarded as partly due to the policy of the Corporation in providing public wash-houses, of which there were 20 at that time, and probably also to the growing practice of householders sending their washing to the laundry. The public wash-houses in the City are not sufficient in number, or so conveniently situated as to replace, in the majority of districts, the need for washing facilities for the tenement.

Washing-houses fall into disrepair from a variety of causes—(1) Through being unused; (2) Decay, consequent on neglect in carrying out minor repairs; and (3) Destructive tendencies of children.

Repairs to wash-houses are usually taken up under the Housing Acts, but an adverse decision in a case taken under the Public Health (Scotland) Act in the Sheriff Court has stopped further action being taken in this respect, and a number of cases are now pending.

The bye-laws framed under the Glasgow Building Regulations Act, 1900, contain the following:—

> *Bye-law* 61.—" When any wash-house, cellar, or other office used " in connection with any habitable room, is in a state of " disrepair, the owner of such wash-house, cellar, or other " office shall, after notice by the Master of Works, make it " fit for the use of the occupiers of such habitable room."

This bye-law was clearly intended to give power to repair existing wash-houses, but Bye-law 101, which applies certain of the bye-laws to buildings existing in 1900, does not include this one among them. So long as this omission remains unrectified, Bye-law 61 cannot be used to enforce the repair of wash-houses in the great majority of houses in Glasgow.

It should be noted, however, (1) that this bye-law does not, in any case, provide a remedy where a wash-house does not exist, and (2) that Section 33 of the Boundaries Act, 1912, expressly excludes the Building Regulations Act and its bye-laws from operation in the case of buildings existing in the areas added to the City in 1912.

Bye-laws which may be made under the Housing Acts provide for, among other things, "facilities for washing and drying clothes." Bye-laws so framed are to apply to new houses and also, so far as is reasonably practicable, to existing houses.

The position remains substantially the same now as it was when the matter was first reported to the committee, who are now considering the advisability of amending the Building Regulation Act bye-laws, giving power to deal with the matter.

Cleansing of Houses, Clothing, &c.—By Section 9 of the Glasgow Corporation (Police) Order Confirmation Act, 1904, power is given to give notice to the occupier, and where there is no occupier, to the proprietor, requiring the cleansing of a dirty house, or dirty bed or body clothing or furnishings, and the experience has been that, as a rule, such cleansing is performed immediately after as is sufficient to comply with the requirements of the notice, and the grounds for prosecution are thus removed. Should either the house, clothing, or furnishings again become dirty within a short period, fresh proceedings are necessary, and instances occur from time to time where two or more notices have been required within a comparatively limited period. To overcome this difficulty, additional powers have been obtained in the Glasgow Corporation Order Confirmation Act, 1929, Section 34 of which repeals but re-enacts the terms of Section 9 of the 1904 Act and incorporates therewith an additional power which enables a prosecution to be taken on a notice, should the house, clothing, or furnishings be again found in a dirty, filthy, or unwholesome condition within a period of three months from the date of the notice. The object of the Clause, as amended, is to secure that cleansing shall be more or less permanent and not merely such as obviates for the moment the possibility of a prosecution.

General Sanitary Operations.—The reports by the Divisional Sanitary Inspectors are included in this section; they deal with the work of the Department, shown in Table XXIII in the Appendix, which contains the tabulated statement of particulars of inspections, nuisances, &c., in the municipal wards of the City for each section of the work.

CENTRAL DIVISION.

In the general sanitary operations, 147,891 visits of inspection were made, and 11,499 complaints were lodged and dealt with. It is gratifying to notice the reduction in the number of nuisances recorded in recent years, no doubt due to slum clearance operations. Richard Street, Clyde Street, Piccadilly Street, the back lands of Brown Street, Carrick Street, &c.—embracing 91 tenements, containing over 1,000 houses—have been demolished; these were the most congested areas, and prolific in the production of nuisances. The district inspectors report that there is also a gradual improvement in the behaviour of the people from a sanitary point of view. Mention might be made of a few nuisances of a special nature dealt with during the year.

Several complaints were made regarding offensive smells arising from the deposition of refuse on a low-lying piece of ground in the Western part of the Division. On inquiry, it was found that a fire had occurred in a local shipyard, and that the debris—consisting of charred wood, old ropes, sack cloth, and other similar material—was being deposited on this ground, and was still smouldering and giving off offensive smells. The owner of the ground at once put a stop to the nuisance.

In another case, a furnace is used for de-tinning old cans brought in by scrap-iron merchants. When the furnace is in operation, the fumes given off are offensive, and become a nuisance to the occupiers of houses in the vicinity. The matter was settled by the owner of the furnace agreeing to suspend operations when the wind blows in the direction of the houses affected. No further complaints have been received.

Complaints regarding the keeping of pigeons have been numerous during the year. Two positive nuisances arise from this practice—(1) the noise caused by the birds, and (2) the attraction of vermin to the property. The home of the pigeon fancier, as a rule, consists of two apartments. The kitchen serves as the family residence, and the room is reserved for the pigeons. The bed recess and the press are converted into dovecots, and disused grocery boxes serve as improvised cages. In time, the floor becomes littered with droppings and the rejected food of the birds; these, of course, serve as an inducement to mice and other vermin. From Partick comes the report that unclaimed pigeons find their way into attics and make their nesting places there. It has been found that the birds become a nuisance in this manner, not only by creating dirt and attracting vermin, but by contaminating the water of uncovered cisterns. To give an illustration—a tenant made complaint of foul-smelling hot water, and, after examination, the decomposing body of a pigeon was found in the storage cistern.

A householder in the west end of the City complained of his house being overrun with mice, and that the mice seemed to be suffering from some form of disease. A boy in the family had a sore on his leg resembling ringworm, and it was learned that one of the mice had been found dead in the boy's stocking some time previously. One of the mice was secured and submitted to the City Bacteriologist who reported the presence of the disease known as Favus, nowadays a rare affection.

The case of the Cat and Dog Hospital in Grant Street mentioned in last year's report again figured in the Police Court. In previous legal proceedings, the Veterinary Surgeon had been ordered to cease keeping dogs. In consequence, the Surgeon kept the premises as a hospital for cats and a receiving house for dogs, the kennels being in Port-Dundas district. The neighbours continued to protest, and the police took action under Section 249, Sub-Section 3, of the 1866 Police Act:—" Every person who carries on any trade or business so as to occasion annoyance to the neighbourhood or inhabitants, unless he proves that he has used the best means for preventing or counteracting such annoyance, is liable to a penalty of forty shillings." The charge was found " Not Proven." The magistrate decided that the respondent had taken all reasonable measures for the prevention of nuisance or annoyance.

The abolition of the old-fashioned privy and dry earth closet is slowly being accomplished. In the central wards of the Division there are only two such conveniences and these remain because, owing to levels, it is impossible to secure drainage. The privies are for the use of employees in workshops, and are isolated. In the outlying parts of the Division, there are still nearly one hundred such conveniences, but as soon as drainage facilities are brought within one hundred yards of the premises, the substitution of w.c. accommodation is requested. During the year, additional w.c. accommodation has been secured in several properties.

During 1924, complaints were received regarding the number and defective structure of ashpits in Partick, and a report was submitted showing that, of 2,130 tenements—containing 20,402 houses and shops —1,175 are provided with ashpits and 784 with ashbins. 88 of the ashpits are sunk below the level of the court; 187 of the ashpits are uncovered; and 61 are out of repair or defective in construction. No action was taken, because Section 33 of the Glasgow Boundaries Act, 1912, precludes ashpits in the added area from being dealt with under the provisions of the Glasgow Building Regulations Act, 1900. Section 69 of the Glasgow Corporation Order Confirmation Act, 1927, has altered the law in this respect, and it is possible the Department will now be able to have these insanitary ashpits abolished.

Drainage.—During the year the drainage inspectors were kept fully occupied. The housing schemes at Knightswood, Scotstoun, and Kelvindale require the whole-time attention of one inspector. In the central part of the Division, the erection or reconstruction of Banks and Insurance Companies' premises continues. A high standard of work is usually associated with this class of building. There is a growing tendency to construct internal bathrooms—separate from w.c. compartments. The Building Regulations provide that one side of every w.c. compartment must be an external wall, but no such provision is made for bathrooms, and to secure adequate ventilation such a requirement is essential, and might be made in any new bye-laws under the Building Regulations Act. The construction of internal bathrooms has been especially noticeable in the converting of large private houses into Nursing Homes. Another question which arose in the course of the year was the provision of adequate w.c. and lavatory accommodation in hotels. Several hotels were erected, and it was only after much persuasion that adequate provision was made. It is suggested that this matter might also be included in the new bye-laws. In dealings with architects regarding this matter, the statutory requirements in Common Lodging Houses and Factories are quoted.

Cleansing of Closes and Stairs.—This branch of the work continues to occupy much of the inspectors' time. For the enforcing of the bye-laws court proceedings were necessary in twelve instances. All of these cases were successful, fines ranging from 2s. 6d. to 40s. being imposed. A fine of 20s. was imposed on a shopkeeper in Duke Street, and, when giving his decision, the Stipendiary Magistrate issued a warning. He said that in Glasgow there was an impression that if the tenant engaged a charwoman to cleanse the close or stair, he or she had no further responsibility; but he wanted it to be understood that no matter what arrangement existed between the tenant and the charwoman, if the latter failed to turn up and the close or stair were left uncleansed, it was the duty of the tenant to sweep and wash it, or get some other person to do so. A considerable amount of trouble is caused in the summer months by people going on holiday and failing to make arrangements for the cleansing of the close or stair during their absence. In one case where the absence was prolonged, action had to be taken. The defaulting tenant was brought back from the coast to appear before the magistrate, and a fine of 2s. 6d. was imposed. Another case was entered in the hope of getting a ruling from the Stipendiary Magistrate as to whether the occupier of a house, as distinct from the tenant, could be prosecuted for failing to cleanse the stair. The tenant of a house in Shuttle Street had gone to America, and the stair was uncleansed. Neighbours complained, and, after repeated efforts, the inspectors gained access to the house, and found the absent tenant's son in residence. He denied liability as he was not the tenant. However, the Procurator-Fiscal agreed to proceed against him as occupier. The Stipendiary Magistrate gave his decision that an occupier who is not the tenant could not be held responsible under the bye-laws. 1,724 notices and rotation cards were issued for the cleansing of closes and stairs during the year.

REGULATED HOUSES.

Ticketed Houses.—The percentage of overcrowding in ticketed houses—12·13—shows a slight increase from last year, while the number of such houses is reduced by 130, through the operations of slum clearance schemes. Overcrowding is most acute in the densely populated wards of Anderston and Sandyford, where the ticketed houses overcrowded are 14 per cent. In Partick the percentage found overcrowded was nearly as high—12 and 13—but the number of ticketed houses in this western part of the Division is much smaller. 6,363 visits of inspection were made to houses of one apartment, 1,054 of which were found overcrowded, 32 of these being overcrowded by the presence of lodgers. 6,606 visits were made to houses of two apartments; 759 were found overcrowded, 78 of which were overcrowded by giving accommodation to lodgers. Out of the 129 visits to houses of three apartments, 16 were found overcrowded, five being so by the keeping of lodgers.

Farmed-Out Houses.—There are 437 registered farmed-out houses in the Division, and 5,461 visits of inspection were paid to these during the year. The outstanding point of interest in connection with the farmed-out houses was the question of rent. Under the provisions of the Glasgow Corporation Order Confirmation Act, 1927 (Section 70), the Corporation may fix the maximum rent to be charged for a farmed-out house. This was done, but several of the house farmers continued to charge rents above the rate so fixed. Reference is made elsewhere to a prosecution taken for infringement of the Order.

A feature which has emerged in connection with farmed-out houses during the year is the installation of supply stores. In two instances house farmers in this Division have opened stores for the supply of food-stuffs, &c. In one case, a single-apartment entered from the close has been converted into a shop, and in the second, the farmer has opened a shop in the adjacent tenement. The house farmer denies that dealing in the shop is a condition of let, but the result of failure on the part of lodgers to purchase their provisions at such a convenient centre can be imagined.

Houses-Let-in-Lodgings.—Very few houses in the Division are registered as houses-let-in-lodgings. There seems to be little cause for special supervision and for the provision of special facilities in the ordinary house giving accommodation to one or more lodgers, but the newer form of multiple occupancy of houses by separate families raises the question as to whether the registration of such can be made beneficial. In the Central Division, there are 1,001 houses in which two or more families reside. There are no one-apartment houses with two or more families. 493 houses of two apartments accommodate two families each, and four contain three families. 300 houses of three apartments contain two families, and 29 give accommodation to three separate families. 127 four-apartment houses contain two families; 29 three families; and 19 four separate families. There are thus 1,101 families living in rooms, unable to find a house of their own. 170 of those families have applied for houses in one or other of the Corporation Housing Schemes, and 19 were offered accommodation, but refused, either because the house offered was in an unsuitable locality, or the applicant was unable to pay the rent demanded. 798

of those lodger families are living in overcrowded conditions, taking three persons per apartment as the standard. Overcrowding is only one of the disadvantages of this mode of occupancy. The lack of sanitary conveniences, too, is a serious matter. Very few of the lodger families are provided with a sink and a water supply. Almost all have to obtain water from the kitchen, and the kitchen is separately occupied. The conditions are aggravated where there are three and four separate families, all dependant upon the occupant of the kitchen for a supply of water and the use of the sink. By this increase in the number of occupants of a house, the lavatory accommodation is rendered inadequate, and other complications arise.

Common Lodging-Houses.—There are 27 common lodging-houses on the register, including ten boarding-houses for seamen. Accommodation is provided for 2,804 males and 300 females in the seventeen common lodging-houses. With the exception of the Salvation Army Home for Women in High Street, none of the lodging-houses is occupied up to capacity. Most of them are only from 50 to 75 per cent. occupied. One of the district inspectors reports that there has been a gradual diminution in the number of inmates for the past four years, attributable to the shrinkage of wharfage on the upper reaches of the river, and to the lessening influx of fugitive or casual labour. The various inspectors are unanimous in their praise of the good sanitary conditions maintained in the lodging-houses. The old-fashioned "bunk" bed has almost disappeared. There are still some in the Corporation Home in Hydepark Street, and these will soon be converted into cubicles. The cooking arrangements in most of the houses still consist of the hot-plate—in a few of the small houses the only provision is an open fire, and in three of the larger houses there is no common cooking place for the lodgers, food being obtainable in the Home Restaurant. In a lodging-house at Scotstoun, which is under the management of a lady, there is an excellent combination of restaurant and hot-plate. The lady superintendent does a considerable amount of cooking, and this branch of her work is popular. In two lodging-houses for women, situated in the centre of the town, competition for patronage is keen, and the keepers include supper in the charge of one shilling per night.

Rat Week.—The week commencing 26th March, 1928, was observed as "Rat Week," 1,621 circulars on rat extermination were issued, including 279 notices to occupiers of properties known, or suspected to be rat-infested. Butchers, bakers, restaurant keepers, hotel proprietors, and other occupiers of shops and warehouses, which might be considered attractive to vermin, were also notified and asked to co-operate. All suspected properties were visited after the special period, and in no case was the occupier found to be inactive. The wooden houses in Woodhouse Street at Anniesland were badly infested with rats, owing to the proximity of a number of piggeries. The piggeries have been demolished and no further complaint has been received. Houses in Scotstounhill were invaded by rats from the unoccupied Balshagray Farm. Arrangements were made to demolish the farm buildings and to destroy the vermin before demolition. For several days rat-catchers were employed, scores of rats were destroyed, and the buildings have now been demolished. Certain dairy premises in the far north-western area of the Division were badly infested. Two ferrets were obtained and sixty rats were caught. In a piggery in the same area, dogs, ferret, and gun were used, and sixty-three rats were destroyed. In another piggery, twenty-five rates were caught. This piggery is shortly to be demolished. In almost all the suspected properties which are kept under observation efforts to keep down the vermin are continuous and successful.

Workshops.—There are 1,597 workshops on the register. 76 notices of occupation were received from H.M. Inspector of Factories, and 23 others were found by the inspectors in the course of their inspection. 12,044 visits of inspection were made, and 513 defects were dealt with. 18 intimations of sanitary defects under the provisions of Section 5 of the 1901 Factory and Workshop Act were received and action taken. The inspector also notified us on 44 occasions when he was instituting proceedings under the Sanitary Accommodation Order, 1903. Almost all shops in the division have now been provided with sanitary conveniences, either within the premises or in a suitable position outwith. Workshops are seldom found overcrowded, but during the year several offices were found to be overcrowded and inadequately ventilated. These have mostly been in premises formerly used as shops, but now converted into offices. As shops, with an open door, the question of ventilation did not arise; but as offices, the door is shut, the windows are fixed, and partitions are erected to form private rooms and typists' room. No consideration is given to ventilation until sickness occurs, or until the manager discovers that the workers are becoming lethargic, and then the sanitary inspector is called in. If the authorities were consulted before such premises were adapted for their new use matters would be simplified.

Underground Workplaces.—Particular attention is paid to underground workplaces, especially bakehouses and restaurant kitchens. While the majority of such places are kept clean, conditions render it difficult to keep them in a satisfactory state. In the case of one underground restaurant kitchen conditions were so bad that prosecution followed. Eventually the owner of the property terminated the lease, and the place is due for closing early in the new year. A new type of bakehouse, in which the process of baking may be seen by the public, is becoming popular. About a dozen of this type have been opened in the Division during the year, and all seem to be thriving. While the process of baking seems to attract the public, and serve as an advertisement, apparently the chief idea underlying this open demonstration is to assure the public that the article bought is manufactured under hygienic conditions, and consequently such places, from a sanitary point of view, must be kept in first-class order. During the year, several bakers finding themselves out of work started baking on their own account, utilising one apartment of their dwelling for the purpose. Trouble has been experienced in seeing that such places are conducted in conformity with the legal requirements.

Homeworkers.—The homeworker is rapidly disappearing. All employers of outworkers must send the names and addresses of such workers to the Local Authority. In 1914, over four hundred and sixty firms made such returns, and in 1928 only 173 employers in the Division were employing outworkers. One of the lady inspectors inquired into this matter, and reports as follows:—

> "The number of homeworkers has been decreasing gradually over a period of five to six years. Various reasons have been given for this reduction.
>
> (1) Some of the tailoring warehouses have a department where ready-mades are semi-finished, and the garments are returned to the factories to be finished according to measurements required.
>
> (2) Some of the men who did hand sewing of boots and shoes found they could make steadier pay in the workshop; they also found it much brighter.
>
> (3) Working men's drill and flannel shirts, which used to be made by the homeworker, and were paid for by the dozen at a very low rate, are being made in the factory. Apparently the electrically-driven machine can produce them even more cheaply than the ordinary sewing machine of the poor homeworker.
>
> (4) The day of the knitting machine is past, except for the cheaper quality of men's socks and boys' stockings. One woman who did a lot of machine knitting now only gets orders from an orphan institution.
>
> (5) With the change of fashion in women's underwear, cotton and flannelette garments, which supplied so many women with work at home, are completely superseded, woven articles of apparel taking their place.
>
> (6) One homeworker, who used to earn an addition to her income by turning and folding linen collars, finds her occupation gone owing to the advent of the soft collar. A Partick homeworker has rather interesting work which comes to him from Edinburgh. He makes silk gowns for Ministers, Barristers, and Doctors of Music."

Housing.—In the Annual Report of 1921 there was presented a statement of the back-lands in the Division. This statement was divided into six groups :—

> (1) Houses officially closed, but still occupied; (2) Houses standing with appeal against a Closing Order; (3) Houses that could be condemned as in a dilapidated condition; (4) Houses situated in obstructive buildings; (5) Houses badly situated only; and (6) Houses in good repair and well situated.

In these six groups there were 77 properties, containing 798 houses —320 of one apartment, 448 of two apartments, and 30 of over two apartments. The following table gives at a glance the position to-day, showing clearly the result of efforts during the past four years to clear the Division of back-lands :—

BACK LANDS.

	Tenements	Houses	Tenements	Houses
Occupied at 31st December, 1921, ...			77	798
Demolished by Order of Dean of Guild, or converted into Business Premises,	12	100		
Included in Slum Clearance Schemes, 1923 to 1928, ...	36	352	48	452
Occupied at 31st December, 1928, ...			29	346

The remaining 346 houses consist of 169 of one apartment, 163 of two apartments, and 14 of more than two apartments. In 1921 there was a population of 2,284 adults and 948 children housed in back-lands in this Division; to-day there are 997 adults and 489 children. Such comparisons are encouraging and lead to the hope that in the not distant future the back-land may disappear.

The underground house is another variety of dwelling which may be dealt with as unsuitable for habitation. In the Central Division there are 580 houses of this nature, principally of one and two apartments. These houses have been divided into five categories :— (1) Houses not having one external wall entirely above the adjoining street or court; (2) Houses partly sunk below street level and partly level with sunk court; (3) Houses facing and approximately level with sunk court; (4) Houses below street level, but having an open area; and (5) Houses partly facing sunk court, and partly facing open area.

There are 57 houses of the first type in the Division. The floors are sunk below the level of the street from three to eight feet. The majority of the houses have an area in front of the window, with only a grating at pavement level. These are deficient in light and ventilation, and all are of one or two apartments: the two apartments are back-to-back in type.

The houses comprising the second group are almost exclusively found in Sandyford Ward. They are mainly houses of two apartments of the through-and-through type; the room faces and is sunk below the street level, with an area in front of window and a grating on pavement level, while the kitchen faces and is level with the sunk court. These houses are deficient in light and ventilation.

In the third group there are 239 houses of one and two apartments. The two apartments are back-to-back in type. Some of the houses are deficient in light and ventilation. Several, owing to the proximity of outbuildings in the court, are illegal as sleeping apartments, under Section 40 of the Building Regulations Act.

There are 124 houses of the type mentioned in Group 4, mostly of two apartments and back-to-back in type. Most of this type are in Wards 15 and 16, and they vary in light and ventilation with the varying width and construction of the area in front of the building.

Group 5 consists of 78 houses of two and three apartments in the same wards; many are deficient in light and ventilation.

During the year, 242 houses were found not to be in a reasonably fit state of repair, and these were dealt with under Part 1 of the 1925 Housing Act. On receipt of notice all the necessary repairs were carried out by the owners. Six tenants applied for certificate under the Rent Act, 1920, and all were granted. No applications were received from owners for counter certificates.

Rehousing Schemes.—The two small rehousing schemes—Yorkhill and Scotstoun—continue to give satisfactory results. The majority of the houses are kept clean; others vary from time to time—ill-health in some cases causes the domestic supervision to become lax. The lady inspectors report an improvement in personal cleanliness. The children, it is reported, are bathed twice a week, and, in some cases, daily; the lady inspector of Yorkhill area reports that the appearance of the bath supports this statement, and, further, she says only in one case have children from Yorkhill Scheme, in the course of her school visitation throughout the year, been reported as verminous.

WILLIAM ROY,
Divisional Sanitary Inspector.

1st March, 1929.

NORTHERN DIVISION.

The estimated population of the Northern Division in 1928 was 279,600—an increase of 11,587 since 1923. A population of 5,631 was added to the division by the extension of the city boundaries in

1926, and the remaining 5,956 is mainly the inflow to the houses erected within the last few years. The completion of the Housing Schemes at Ruchill, Balmore, Carntyne, &c., will provide for a further large addition to the population of this division. The only ward showing an appreciable decrease since 1923 is Cowcaddens. That year may be said to mark the beginning of recent effective slum clearance, and since then the population of Cowcaddens has fallen by 2,583.

General Nuisances.—A detailed statement of the operations carried out during the year is given in Appendix Table No. XXIII.

Among the more outstanding nuisances dealt with, and one which gave rise to numerous complaints, was an offensive smell emanating from the sewers, which for some time pervaded an extensive area around St. George's Cross. It was ultimately found to be due to the chokage of a pipe conveying a liquid highly charged with sulphur, and a consequent back-flow into a sewer at a point a considerable distance from the area affected by the nuisance. The clearing of the chokage removed the trouble.

A source of recurring nuisance is a portion of the Molendinar Burn. This burn flows openly for some distance near Ladywell Street and Drygate and, as it receives sewage from several nearby tenements, and is also a receptacle for rubbish of all kinds, it periodically gets into a foul and silted-up condition. It is anything but a hygienic paddling pool for the children in the neighbourhood, who are attracted to it during the summer months, and the covering-in of the burn, which appears to be the only adequate remedy, is very desirable.

Complaints were received from time to time from occupiers of houses in tenement properties with regard to the lack of facilities for washing clothes. There are 587 properties without wash-house accommodation, and 278 in connection with which the wash-houses are so dilapidated as to be unusable, and there is no doubt that to many housewives the want of a wash-house is a serious handicap. The public wash-houses serve a useful purpose but to a large number of women they are not available, because of distance, and the danger of leaving young children unattended.

Sanitary Conveniences.—The following is a statement with regard to the number of common water-closets, privies, &c., as at 31st December, 1928 :—

Privies, ...	218
Earth-closets, ...	—
Privy-middens, ...	43
Water-closets serving two tenants, ...	1,610
,, ,, three ,, ...	5.775
,, ,, four ,, ...	2,161
,, ,, five ,, or more, ..	489
Dry-closets serving one tenant, ...	56
,, ,, two tenants, ...	35
,, ,, three ,, ...	26
,, ,, four ,, ...	4
,, ,, five ,, ...	6

Privy-middens serving one tenant, ...	12
,, ,, two tenants, ...	11
,, ,, three ,, ...	2
,, ,, four ,, ...	—
,, ,, five ,, ...	18
Ashpits serving two tenants, ...	6
,, ,, three ,, ...	5
,, ,, four ,, ...	3
,, ,, five or more tenants, ...	415
Houses without water-supply or sink inside—	
One apartment, ...	285
Two apartments, ...	116
Three ,, or more, ...	8

Included in the above are privies in connection with factories, workshops, and other business premises. Dwelling-houses without w.c. accommodation or inside water-supply are mostly in areas where there are drainage difficulties.

Slum Clearance.—556 dwelling-houses in the Northern Division were included in the Improvement Scheme, 1928, and of that number all but five were represented as being uninhabitable. 73 were in Townhead, 170 in Cowcaddens, 117 in Woodside, and 196 in Maryhill, and a total population of 2,342 was affected. The houses suffered from the defects usually found in slum properties, viz.—deficiency in light and ventilation; defective structure and design; lack of proper sanitary conveniences; and disrepair.

With regard to overcrowding in these houses, on a standard of three persons per apartment, it was found that of the 379 occupied one-apartment houses, and the 158 houses of two-apartments, 208, or 55 per cent., of the former, and 38, or 24 per cent., of the latter, were overcrowded. Eight of the two-apartment houses were occupied by two families. The following table shows the degree of overcrowding in the houses referred to:—

ONE-APARTMENT HOUSES.

Number of persons occupying houses, ...	4	5	6	7	8	9	10	11	Total
Number of houses overcrowded, ...	71	51	38	25	10	9	1	3	208

TWO-APARTMENT HOUSES.

Number of persons occupying houses,	7	8	9	10	11	Total
Number of houses overcrowded, ...	18	11	4	3	2	38

Closing orders, in terms of Section 8 of the Housing Act, were made regarding 46 dwelling-houses. Included among these was a row of fifteen single-storey houses, one of the outstanding defects of which was the insanitary privy accommodation. The owners would not face the cost of installing proper water-closets and made no objection to the closing order.

The progress made in slum clearance in this division during the period of 1923-1928 is indicated in the following statement:—

Houses demolished under improvement schemes, ...	701
Houses dealt with by improvement schemes but not yet demolished,	768
Houses dealt with by closing orders and demolished, ...	18
Houses dealt with by closing orders, and not demolished, ...	48
Houses demolished by order of Master of Works, ...	93
Houses demolished for other reasons, ...	17
	1,645

The ward distribution of the houses specified above is as follows.—Provan, 22; Cowlairs, 8; Springburn, 6; Townhead, 153; Cowcaddens, 1,055; Woodside, 185; Ruchill, 19; Maryhill, 197; total 1,645.

Slum Clearance—Rehousing.—Many of the houses in the areas from which the tenants came were bug-infested, and, in order to prevent, as far as possible, the transportation of bugs from the old houses to the new, special measures were taken to deal with the furnishings before removal took place. In most cases an inspection of the houses was made before the tenants removed, and if there was any ground for suspecting the presence of bugs the furniture was, a few days prior to the date of removal, sprayed with insecticide, and thereafter thoroughly scrubbed by the tenant with soap and water. On the day of the flitting this process was repeated, special attention being given to pictures—a favourite habitat of the bug—and the mattresses, bedding, &c., then sent to the disinfecting station for treatment. These were delivered to the new addresses on the same day. All this entails a considerable amount of arrangement, but there is no doubt it has the important result of preventing to a large extent the pollution of the new houses.

The furnishings of 161 houses were treated in this manner, the great majority of them being in connection with removals to Germiston in the latter part of the year. In 22 of these cases the tenants have been in occupation for more than three months and there has been so far no evidence of bugs; while in the other houses, more recently occupied, there is no indication that vermin has been brought with the furniture.

In the Hamiltonhill and Campbell Street Schemes, 86 houses were throughout the year reported as being in a more or less bug-infested condition. These, in most cases, had treatment for the extermination of the vermin from workmen of the City Improvements Department, and, in a few instances, from the tenants themselves, where it was deemed advisable as a precautionary measure, mattresses and bedding were also specially treated, and, of the whole number dealt with, there was a recurrence in only a comparatively few cases. If a house is infested by bugs they are almost invariably found behind the wooden picture rails and occasionally behind the wall skirtings; and the houses would be less liable to pollution if cement skirtings and picture rails of a type less likely to afford harbourage for these pests could be provided.

Intermediate Houses.—136 houses of this type, included in the Ruchill, Possil, and Balgraybank Schemes, were in occupation towards the end of the year. The average number of persons per apartment in the new houses is in the following table compared with the average number in the houses formerly occupied by the families concerned—

indicating the improvement of their conditions with regard to overcrowding :—

Old Conditions			New Conditions		
Number and Size of Houses formerly occupied by Re-housed Families	Population	Average Number of Persons per Apartment	Number and Size of Houses in which these have been Re-housed	Population	Average Number of Persons per Apartment
69 of 1-Apartment,	427	6·1	335 of 3-Apartments,	1,976	1·9
315 of 2-Apartments,	1,946	3·0	68 of 4-Apartments,	509	1·8
19 of 3-Apartments,	112	1·9			
Totals, 403	2,485	3·2	403	2,485	1·9

Other 33 families were in lodgings prior to being rehoused.

Repair of Houses.—In addition to disrepair in dwelling-houses dealt with under the Public Health Act, notices were issued in terms of Section 3 of the Housing Act, with regard to the repair of other 517 houses. The defects were those associated with old buildings—broken plaster, dilapidated woodwork, defective windows, &c. The carrying out of repairs such as these renders the houses reasonably habitable so far as that can be done by repair, but "reconditioning," if by that is meant the structural alteration of a house to bring it into line with modern standards, would obviously be a much bigger undertaking, and one that would be feasible in few, if any, old tenement buildings.

Overcrowding.—Night inspection of "ticketed" houses was continued, and of the houses visited 16 per cent. were overcrowded, on the cubic space standard of 400 feet for an adult and 200 feet for a child.

It would be difficult to say whether overcrowding of dwelling-houses is on the whole increasing or decreasing, but it is at least certain that it continues to be serious in the small, low-rented houses, and especially in the single-apartments. With a view to ascertaining the degree of overcrowding in different types of houses, an inquiry was made which covered three distinct groups, and the result, which bears out the statement made above, is given in the following table. In this inquiry the standard of overcrowding was three persons per apartment.

Group 1 consists of houses which are included in a slum clearance scheme, and occupied for the most part by families of the very poorest class.

Group 2 includes houses which are mostly of a better type than those in Group 1, and occupied by families of the labouring class.

Group 3 comprises houses in substantial, modern tenements, and occupied by higher paid artisans.

	Number of Houses.	Population.	Average Number of Persons per Apartment.	Number overcrowded on Basis of Three Persons per Apartment.	Percentage of Total
GROUP I. :					
1-Apartment,	379	1,497	3·9	208	55
2-Apartments,	158	763	2·4	38	24
3-Apartments,	9	52	1·9	2	22
Total, ...	546	2,312	3·2	248	45
GROUP II. :					
1-Apartment,	205	556	2·7	53	26
2-Apartments,	262	1,202	2·3	46	18
3-Apartments,	53	287	1·8	1	2
Total, ...	520	2,045	2·3	100	19
GROUP III. :					
1-Apartment,	9	23	2·6	...	...
2-Apartments,	427	1,458	1·7	9	2
3-Apartments,	28	98	1·2	...	...
Total, ...	464	1,579	1·7	9	2

Workshops and Bakehouses.—At the end of the year there were on the register 604 workshops, 49 workshop bakehouses, and 35 factory bakehouses. Periodical inspections of these were made, and 114 intimations were issued to occupiers with regard to insanitary conditions.

Offensive Trades.—There are 13 of these carried on within the division, and regular inspections revealed no serious infringement of the bye-laws.

Common Lodging-houses.—There is no change in the number of common lodging-houses, as compared with last year, there being on the register six for males and one for females. The houses are well conducted.

Rats and Mice Act.—Operations for the destruction of rats are carried on continuously, but special efforts were made during "Rat Week," when trapping and poisoning were largely resorted to. Owners of tenement property are usually willing to take action when the rat-infested condition of premises is brought to their notice, and in one instance a property, consisting of five tenements of shops and dwelling-houses, was extensively overhauled and ratproofed. An expenditure of nearly £200 was, it is understood, incurred in the operations, which appear to have been entirely successful.

A somewhat unusual case of rat-infestation occurred during the month of August, when a group of tenements was invaded. Rats were known to have been in the property some years ago, but the invasion referred to appears to have been sudden, as until the rats were actually seen in the houses, their presence in the building was unsuspected by the tenants. The results to one family were serious. Two of the children were bitten on the face and head while sleeping in bed, and, apart from injury, so badly scared were the children that it was considered advisable to find another house for the family. Near to the tenements in question stood a garage, which had formerly been occupied as a stable, and as the demolition of this garage and the invasion of the houses occurred more or less simultaneously it was fairly conclusive that the rats migrated from the demolished building to the tenements. Prompt action by the owners speedily cleared the premises of the vermin.

House-to-house Visitation, &c.—Much of the time of the lady inspectors was, as in previous years, devoted to the examination of school children suspected of being verminous or dirty. For that purpose 392 visits to schools were made, and 5,015 children examined. Of that number 123 were found to be infested with vermin, 1,649 were slightly verminous, and 351 were dirty but not verminous. A group of four children from one family was taken to the reception house, and there cleansed. Visits to the homes of the vermin-infested and dirty children were made, and in 75 instances the houses were found in a dirty condition, while the bedding in 38 houses was also dirty. The householders concerned were in every case called upon to carry out the necessary cleansing.

Regular house-to-house visitation was carried out in selected areas. 463 houses were discovered in a dirty condition, and the bedding in 111 houses was filthy. Recourse to court proceedings, in order to enforce the cleansing of these, was necessary in only two instances.

Reference has been made in previous reports to the extreme difficulty that occasionally arises in dealing satisfactorily with dirty houses occupied by old and infirm single persons. In such cases the occupiers are usually physically incapable of attending properly to bodily cleanliness, or to the cleanliness of the house, and, as a consequence, insanitary conditions quickly arise. There may be absolute refusal to go to an institution, and if there is no willing relative to give assistance we are more or less at a dead end. In these circumstances, and bearing in mind the possible danger or discomfort to the tenants of adjoining houses, there is no doubt that, in the interests of everyone concerned, such cases should be removed to an institution where they would be properly cared for.

At present we have no power to remove and detain old people such as these without their consent, but, in order to prevent, as far as possible, the unsatisfactory conditions referred to, it is desirable that powers similar to those recently obtained by the London County Council should be procured. These are to the effect that, if a medical officer makes application to a magistrate an order may be made for the removal and detention of " any person who is aged or infirm or physically incapacitated and resides in premises in the district which are insanitary, owing to any neglect on the part of the occupier thereof or under insanitary conditions; or is suffering from any grave chronic disease, and that such person is unable to devote to himself or to receive from persons with whom he resides proper care and attention," &c.

J. H. PATTERSON,
Divisional Sanitary Inspector.

26th March, 1929.

EASTERN DIVISION.

I was appointed Sanitary Inspector of the Eastern Division on 1st June, 1928, in succession to Mr. John Donaldson, who retired after thirty-eight years' service in the Department, and whose work is included in this Report.

Nuisances.—228,049 inspections were made for the discovery and removal of nuisances, and 12,325 complaints were dealt with, as recorded in Table XXIII of the appendix.

Complaints of smells from various sources were fairly numerous, and in some cases necessitated premises being kept under observation for a period prior to statutory action. Details of a few such cases, because of their varied nature, are given hereunder.

From the boiling of oil in a large manufacturing establishment fumes of an offensive nature were being discharged through a short metal exhaust pipe into the external air, and being heavier than air they descended and polluted the atmosphere of the adjoining premises. Several expedients were tried, and eventually the nuisance was overcome by conveying the fumes, assisted by a steam jet, through a metal pipe to a receptacle containing water, which acted on the principle of a steam trap.

The proprietors of the lands adjoining the Camlachie Burn in Mountainblue Street were called upon to remove large collections of silted matter and other refuse which had collected in the burn, and which were impeding the free flow of the water, as well as giving rise to most offensive smells, particularly during the summer months when the flow of water was at its lowest. After considerable correspondence, the work of removing the silt and refuse was commenced, and about 40 tons, or thereby, were removed.

The burn, particularly at Mountainblue Street, has in the past been the source of periodical complaints. As it is easily accessible to the general public at this point, it is used as a depository for all kinds of refuse, and not infrequently carcases of cats and dogs are found therein. In order to protect the burn from this form of pollution it was suggested that the proprietors concerned should erect a sufficiently high hoarding, in substitution for the existing low wooden paling which lines its south bank, and thus make it more difficult for anyone to pollute the burn. The suggestion has not been adopted so far, nor is it likely to be, in view of the expense involved.

Towards the end of the year complaints of smoke arising from a fish-curing business were made by people living in the vicinity. While the premises were being kept under observation, prior to statutory action, they were burned down, and since then the business has been temporarily suspended.

Complaints of this kind are periodical, and it is unfortunate that the Local Authority should not have power to object to such businesses being established in congested areas and close to dwelling-houses. As the trade of fish-curing or kippering is closely allied to some of the offensive trades named in Section 32 of the Public Health (Scotland) Act, 1897, the Local Authority might reasonably consider the question of including it as an offensive trade, and thus be in a position to control the situation and conduct of such establishments.

Drainage.—The smoke test was applied on 1,053 occasions, of which 352 were for the satisfaction of the Dean of Guild Court in connection with new buildings, and the remaining 701 were in connection with old buildings where there was reasonable cause for the application. As a result of the tests applied to the drains and plumberwork of old buildings, 53 water-closets of the obsolete "pan" pattern were removed, and modern conveniences substituted. A considerable number of repairs to drains and plumberwork were also carried out.

Several courts and passages at the rear of properties at the Springfield Road Rehousing Scheme were, during wet weather, flooded with surface water, and as no provision to remove it was originally made in the drainage systems, it was found necessary to introduce a trapped drain inlet at each court so affected. These drain inlets serve a double purpose; they not only drain off surface water, but, should the drain become choked on the house side of the intercepting trap, they prevent the baths, being the lowest fittings, in the ground flat houses being filled with sewage.

A good deal of the drainage inspector's time has been given to those soliciting information with regard to contemplated alterations of drainage and plumbing systems, and the frequent inspections necessitated by such alterations while the work was in progress.

Tents and Vans used for human habitation.—Within recent years the number of vans used for human habitation has been steadily increasing, due, in a large measure, to the housing shortage and the cheaper mode of living, in so far as rent is concerned. Probably the latter reason is accountable for much of the increase, as many of the present van-dwellers gave up houses in tenement property for the "simple life." The majority of those who have adopted this form of housing are not of the travelling class, and are content to remain on the same ground so long as work can be obtained in the vicinity; in fact, quite a number of the vans have remained so long stationary that it would now be impossible for them to take to the road in consequence of the dilapidated condition of the under structures.

That there is a demand for ground to accommodate such habitations is evident from the fact that those people who make a practice of letting their spare ground for this purpose are seldom without a tenant. It is not uncommon to find an odd van in such places as stable yards, private courts, or any vacant ground, where, in the last-mentioned, there is an opportunity of remaining for a few days rent free. In addition to odd vans here and there, there have been for many years what might be described as van colonies in the division. In these colonies the vans are packed together without regard for regular formation and proper spacing, so that the proximity of one van with another constitutes a condition which is not conducive to a healthy environment. Overcrowding of the ground is most pronounced during the winter months, when the number of vans is considerably augmented by the arrival of travelling showmen bent on spending the festive season in the city, and by such augmentation the picture of a congested area is completed.

When the bye-laws relative to such structures were framed conditions such as those stated were never anticipated, and they are therefore unsuitable in their application to present-day experience, *e.g.*, there is no provision in the bye-laws for regulating the number of vans which may be accommodated on a given piece of ground, and sanitary accommodation, drainage, and water supply are to be provided by the owner or occupier of the van. The provision of sanitary accommodation is surely the duty of the person who lets the ground to the van owner. In almost all cases the owners of the ground have provided these sanitary arrangements, but nevertheless it is the van owner who is responsible in terms of the bye-laws.

As many other matters arising from the prevailing conditions could not adequately be dealt with by the existing regulations, the Corporation included certain clauses in a Provisional Order, applicable to tents, vans, sheds, or similar structures used for human habitation, framed in such terms as to overcome the hiatus. In the Order, which is awaiting Parliamentary confirmation, it is sought to make it unlawful for any person to let or use any land for the occupation by any tent, van, shed, or similar structure used for human habitation without the consent of the Corporation. Such consent may be given for such period, and on such conditions as the Corporation think fit.

A survey was made of vans used for human habitation in the Division towards the end of the year, and from the tabular statement below their situation, the number of travelling and non-travelling vans, with their populations, will give an idea of the extent of this form of housing.

	Travelling Vans				Non-travelling Vans			
		Population				Population		
Locality	Number	Adults	Children	Total	Number	Adults	Children	Total
Vinegarhill,... ...	46	110	62	172	87	179	100	279
54-62 Sword Street, ...	—	—	—	—	25	48	28	76
1370 Gallowgate, ...	—	—	—	—	2	4	2	6
1388 Gallowgate, ...	—	—	—	—	1	1	1	2
26 Chalmers Street, ...	—	—	—	—	1	3	—	3
Yate Street,... ...	—	—	—	—	2	4	—	4
Barrowfield Street,	—	—	—	—	16	29	23	52
Fielden Place, ...	21	41	35	76	6	12	4	16
Fenella Street, ...	—	—	—	—	7	14	5	19
1464 Shettleston Road, ...	1	2	1	3	2	5	2	7
318 Old Shettleston Rd.,	—	—	—	—	1	2	3	5
20 Anworth Street, ...	—	—	—	—	1	1	—	1
60 Mill Street, ...	—	—	—	—	1	2	1	3
24 Laird Street, ...	2	4	—	4	—	—	—	—
11 Laird Street, ...	2	4	7	11	1	1	—	1
16 Mauldslie Street, ...	2	5	2	7	1	2	1	3
Totals, ...	74	166	107	273	154	307	170	477

It will be seen from the table that 750 persons were living in 228 vans, of which vans 154, with a population of 477, do not travel. The average number of persons per van for the whole division was 3·28, a fairly high average for the type of van in general use, and tells its own tale of overcrowding. Very little can be done with regard to overcrowding, in view of the housing shortage.

Fifty-seven of the travelling vans were occupied by showmen, and the remaining 17 were occupied by hawkers and dealers in various household articles. Amongst the occupants of the 154 non-travelling vans there were a number of tradesmen, such as joiners, engineers, and slaters, but the majority were of the labouring class; two gave their occupations as mendicants, and there was only one disabled soldier.

From the occupations of those described as non-travellers it is obvious that they are representative of people who, in normal times, would be accommodated in houses, and of those who do not necessarily require vans as habitations, in order to pursue their regular employment, but by reason of circumstances, *e.g.*, unemployment and scarcity of houses, have taken to this form of dwelling.

The internal condition of all the vans, in so far as cleanliness was concerned, was on the whole good, but many of them were, externally, in a patched-up condition, and showed signs of instability. The sanitary arrangements provided for the use of these people are, in some cases, of a primitive nature, and, while they may conform to the present regulations, they are not what they should be at this time.

Fourteen owners or occupiers of vans used for human habitation who failed to provide suitable water supply and other conveniences, after being warned to do so, were reported for prosecution. Before the offenders were summoned to the court the necessary conveniences were provided, and, in view of that, court proceedings were withdrawn.

HOUSING.

Removals.—During the year there appeared to be more changes of occupancy than usual, but as the number of empty houses, particularly of the smaller class, was not increased it was concluded that the removing parties simply exchanged houses.

Overcrowding.—While no special survey was made to ascertain the extent of overcrowding generally, there is reason to believe that its extent is much the same as in recent years. This belief is borne out by the number of overcrowded houses, ticketed and unticketed, discovered in the course of ordinary routine work, and by the number of people seeking the aid of the Department to procure larger houses, or, if in lodgings, houses of their own. Most of those seeking assistance reside outwith Improvement Schemes. Their incomes range from thirty odd shillings to £4 weekly, and, if there were houses of the "Intermediate" type in the division, many of them would be suitable subjects for such a type of house.

Lodger Families.—The plight of some families who cannot get houses of their own and have to take rooms, furnished and unfurnished, is worthy of notice. From information obtained from such families it would appear that factors are reluctant to give them houses, when such are "to let," by reason of their inability to produce a rent book from a previous factor, or to give some indication of their ability to pay rent. Consequently, in their anxiety to obtain housing accommodation, they pay dearly for their misfortune. The following illustrates the experiences of two families who could not obtain houses of their own and who procured rooms in a certain house.

A person, who for reference is called A, had a house; yet he obtained the tenancy of a second house, consisting of three apartments, at an annual rental, including taxes, of £24. The kitchen of the house was let to a relative B, who acted as caretaker, and a room was then let to each of the families above mentioned, C and D. The sequel is that B (the relative) paid no rent, but C and D paid between them £44 4s. per annum, and A profited to the extent of £20 4s. yearly.

When the principal tenant became aware of the Sanitary Officer's inquiries he speedily terminated the let, and the lodger families had to seek other rooms.

Ticketed Houses.—Of the ticketed houses visited, 14·09 per cent. housed persons in excess of the number allowed. The excess in almost all instances was due to large families. In the few cases where lodgers were responsible for the overcrowding the householders were warned, and when revisited it was found that the warnings had taken effect.

The worst cases of overcrowding were in single-apartment houses, the excess in 6 of which was from 4½ to 6½ adults. (A half adult means a child under 10 years of age.) To understand better what a single apartment can be like when overcrowded by 6½ adults the sexes and ages of the inmates of one such house are given below :—Father and mother; 4 sons, aged 18, 17, 10, and 2; and 6 daughters, aged 16, 14, 12, 8, 6, and 4—in all 12 persons. For this family a house with four sleeping apartments is required, but as the father is a labourer, more often idle than working, while the income of the family from all sources is under £5 weekly, the rent of such a house is beyond his means.

Common Lodging-houses.—The common lodging-houses number 11, of which 6 are for the accommodation of males and 5 for females. The total number of persons who may be accommodated in these houses is 2,808. All the houses are well conducted and the cleanliness observed at all times is worthy of recording. There has been an all round decrease in the number of female lodgers, said to be due to the difficulty of obtaining Parish relief while living in a common lodging-house, and it would appear that, in order to remove the difficulty, lodgers are either obtaining lodgings in private houses or procuring small houses of their own.

Farmed-out Houses.—There are on the register 205 farmed-out houses, an increase of 17 since last year. The increase is accounted for by the action of an owner of two properties who, as the ordinary monthly tenants removed, relet the houses as furnished apartments, which were eventually declared farmed-out houses. The night visitations revealed no overcrowding in these houses.

Dwelling-houses demolished or closed for repairs.—Apart from the demolition of houses in clearance schemes 15 properties, consisting of 112 houses of various sizes, were demolished, 6 of which were for the purpose of extending business premises, and the remaining 9 were dealt with as dangerous buildings by order of the Dean of Guild. In addition, 27 families were ordered by the Dean of Guild to remove from houses until structural repairs, which could not be executed while the houses were occupied, were carried out. A number of the tenants so displaced were accommodated in the various housing schemes.

New houses.—486 houses were erected during the year, consisting of from 2 to 5 apartments. All the houses were in Corporation housing scheme, except 13, of which 9 were erected by the Second Scottish National Housing Trust and 4 by private builders.

Improvement Schemes, 1923 *to* 1928.—The following statement shows the number of families rehoused and to be rehoused at the end of the year:—

Transferred to re-housing schemes, ...	443
"Substituted" and transferred to re-housing schemes, ...	97
Removed voluntarily or on account of non-payment of rent, &c., ...	92
Number of families still to be provided for, ...	1,116

Rehousing Schemes.—The few houses in the Springfield Road and Duke Street Schemes which were not ready for occupancy at the end of 1927 were completed and occupied early in the year. There are in occupation in the various rehousing schemes 1,142 houses situated as follows:—Newbank, 346; Belvidere, 248; Garvald Street, 24; Springfield Road, 308; and Duke Street, 216. To this total of 1,142 there falls to be added the houses in course of erection and almost completed at Parkhead, Westmuir Street, and Burgher Street, numbering 96, 36, and 12 respectively.

Special attention has been paid to the transference of tenants and their furniture from the old to the new houses, in order that bug-infested pictures and furnishings should not be the means of infesting the new houses. The activities of the Department, with the co-operation of the tenants in that direction, have no doubt considerably averted potential infestations in the new houses, and while infestation has been observed in a number of these houses, the measures taken for the eradication of the vermin have, in most cases, proved successful.

Offensive Trades.—No new application was made for sanction to establish an offensive trade, and the number of licences remains the same as last year, viz., 44. All nuisances or contraventions of the bye-laws were promptly attended to.

Piggeries.—114 inspections were made of the eight piggeries which are licensed to keep 984 pigs. All the premises conform to the regulations and are well kept. An application to keep swine at Carntyne was objected to in respect of the dilapidated condition of the buildings and to the source of the water supply. The applicant proposed to obtain a water supply from a hole, about 1 foot deep, in the ground adjacent to the proposed piggery and in which sub-soil water polluted with oil had collected. The licence was refused.

Cemeteries.—Regular visits were paid to the various cemeteries, which appear to be well conducted, and no contraventions of the bye-laws were observed.

Application was made and granted for a burial in the Calton Burial Ground. The deceased was a centenarian, and it was the desire of the relatives that she should be buried in the family lair. This will probably be the last interment in this burial ground.

SANITARY CONVENIENCES USED IN COMMON BY TENANTS OF DWELLING-HOUSES.

	No. of Tenants Served.					
Nature of Convenience.	1	2	3	4	5 or more	Totals.
Water Closets, ...	—	1372	6489	2167	419	10447
Sinks and water supply outwith dwelling-houses, ...	282	132	23	—	—	437
Dry closets, ...	8	—	—	—	—	8
Privy middens, ...	—	—	—	—	—	—
Ashpits, ...	—	—	1	2	191	194

In addition there are 28 dry closets in business premises and 1 privy midden, seldom used, connected with a stable.

The dwelling-houses served with dry closets are situated in districts where there are no sewers within a reasonable distance, and in most cases are very old houses, ripe for demolition.

General.—The work in connection with the Rag Flock Act; the Limewashing of Closes and Staircases; the Cleansing of Closes and Stairs; the Cleansing of Water Storage Cisterns; the Factory and Workshop Act; verminous children; dirty houses, and the spraying of dungpits for the suppression of flies calls for no particular comment, and the details relating to the whole are contained in Table XXIII of the appendix.

A. STIRLING,
Divisional Sanitary Inspector.

16th March, 1929.

SOUTH-EASTERN DIVISION.

Nuisances.—All complaints received throughout the year with reference to the existence of nuisances were fully investigated and action at once taken for the removal of such as were found to exist. In addition to these investigations, a regular and systematic survey of the district was maintained. 174,612 visits were paid in the course of these inquiries, resulting in the removal of 7,169 nuisances.

A nuisance, arising from the polluted state of John's Burn, Nitshill, had again to be dealt with. At the date of amalgamation of this area with the City it was found that a quantity of sewage was being discharged into the burn. Subsequently, the sewer, from which this pollution came, was connected up with the sewage purification system which had been installed some short time before amalgamation. Apparently, however, it was found that the purification works were inadequate to cope with this additional sewage and the sewer was in consequence disconnected and again allowed to discharge into the burn. The source of this pollution is from an area outwith the City Boundary and consists of the drainage from a row of houses and also from a chemical works and from the railway station. A pond in a field adjoining the station is also drained into this sewer. The drainage from the row of houses and also from the chemical works is passed through settling tanks and thus receives a certain amount of purification treatment before it enters the burn. On being communicated with, the Authority of the area in which the houses and works are situated had the tanks examined to ensure that they were working efficiently. Arrangements were subsequently made to have the burn cleaned out, and when this work was completed a sample of the effluent from the sewer at its point of discharge into the burn was obtained and submitted to the City Analyst, and the following is from his report:—

> "This discharge, as represented by the sample submitted, had a decided opalescent appearance, due to the presence of colloidal and suspended solids—waste products from the chemical works.
>
> The discharge contained phosphates in solution amounting to 9·2 parts of phosphoric acid (P_2O_5) and in suspension 4·55 parts per 100,000 of mixed oxides, of which 3·82 parts consisted of alumina.
>
> Apart from the waste products from the chemical works, this discharge contains very little polluting matter.
>
> The objectionable feature of the discharge is the presence of soluble phosphates, a suitable nutrient for the growth of the fungi which at certain seasons of the year renders the appearance of the burn unsightly."

From the above report it will be observed that the principal source of pollution is from the waste products from the chemical works.

A nuisance arising from the obstruction of the free flow of the water in the Mill Lade at Pollokshaws was also dealt with. This lade is now unused and the Corporation, having acquired a portion of the ground (Greenbank) through which the lade passes, instituted negotiations with the other proprietors with a view to having the lade filled up. Before these negotiations were completed some of the proprietors began to fill up their portions, so that the water was obstructed and became stagnant and offensive. On representations being made, this action was discontinued and the lade cleaned out.

A large piggery, which had just been erected immediately outside the City Boundary, was found to be the source of serious pollution of another burn within the district, regarding which complaints were received.

On the matter being brought to the notice of the County Authorities, the discharge of the piggery drainage into the burn was stopped, thus removing all cause for complaint.

During the year a change in the nature of the pollution of Jenny's Burn became apparent and the strong smells of sulphuretted hydrogen, arising from the pollution from the slag heaps, had given place to a burnt odour, while the colour of the water had become brownish. Two samples of water from the burn and one sample from the Calder Street sewer, which flows into the burn, were examined by the City Analyst, whose report thereon is as follows:—

ANALYSIS OF BURN WATER.

(All results expressed in parts per 100,000).

	Sample No. 1.	Sample No. 2.	Sample No. 3.
Colour, ...	Greenish Black.	Brown.	Brown.
Odour, ...	Marked Smoky.	Marked Sooty.	Marked Sooty.
Free and Saline Ammonia, ...	1·150	1·250	1·350
Albuminoid Ammonia, ...	0·250	0·850	0·900
Oxygen absorbed in 15 minutes at 27°C,	31·40	141·00	57·50
Oxygen absorbed in 4 hours at 27°C, ...	53·10	232·00	103·90
Phenols, ...	25·00	35·00	40·00
Total solids in solution, ...	106·00	183·80	128·20
Mineral solids, ...	47·20	9·40	30·70
Volatile or organic solids, ...	58·80	174·40	97·50
Acidity expressed in terms of Lime (CaO),	9·80	78·40	28·00
Sulphides, ...	Trace.	None.	None.

Sample No. 1.—Collected from Jenny's Burn south of Rutherglen Road, August 2nd, 1928.

Sample No. 2.—Collected from Calder Street sewer after leaving Dixon's Filters and before entering Malls Mire Burn.

Sample No. 3.—Collected from Malls Mire Burn before joining West Burn.

In a letter accompanying his report the City Analyst referred to samples of water from the burn which had been examined by him in 1924 and said, "Comparing the results then obtained with the results now reported upon, there appears to have been a change in the character and probably the source of pollution. Each of the three samples possessed a new and very marked odour characteristic of smoke. Further, the samples are heavily charged with oxidisable matter in amount far in excess of the quantity previously recorded." This polluting oxidisable matter is apparently coming through the Calder Street sewer from a public works in the vicinity. This new pollution will, of course, be discontinued when the Calder Street and Jessie Street sewers have been connected up to the main drainage system. Negotiations are, I understand, still proceeding with a view to having this work carried out.

No complaints have been received with reference to the mosquito nuisance at Muirend since the cleaning of the ditches. The ground has been visited from time to time, and towards the end of the year it was found that the ditches were becoming silted up, thus obstructing the free flow of the water. A meeting, at which Dr. Gunn was also present, took place with the County Sanitary Inspector and a representative of the proprietors, resulting in arrangements being made for the cleaning out of the ditches in the coming spring, this postponement of the work being considered advisable owing to the large quantity of water in the ditches and surrounding ground being likely to prevent the effective carrying out of the work.

The condition of the south bank of the River Clyde at Carlton Place gave rise to complaints owing to its being littered with papers, &c., by the patrons of the 'buses on the stance there. The various proprietors of the ground were interviewed, but they declined to accept responsibility, stating that the 'bus stance had been put there without their sanction; that they had no control over the public who were throwing down the paper; and that, in their opinion, it was the Local Authority's duty to prevent the offence being committed. The Chief Constable had the matter under consideration, but was of opinion that he could take no action against offenders as the ground was enclosed and privately owned. There being no nuisance, the litter being in no way offensive, action could not be taken by this Department against the proprietors, and ultimately it was arranged that the ground should be cleaned periodically by the Cleansing Department.

The effluent from the small sewage works taking the drainage from twelve houses at Burnfield Cottages, near Giffnock Colliery, having been found to be unsatisfactory, the factors for the cottages were communicated with and requested to have the filter and settling tank cleaned. This work having been completed a satisfactory effluent is again being obtained.

W.c.'s for Shops.—W.c. accommodation was provided for, or arrangements were made for the use of existing accommodation by, the shop-keepers and their assistants in 45 shops and negotiations are proceeding with regard to others. As explained in last year's report, the difficulty of finding suitable sites for these conveniences makes it necessary to accept arrangements which are not so satisfactory as might be desired.

Drainage.—The continued building activities have again caused a substantial increase in this work, which has been more than doubled within the past two years, the smoke-test having been applied on 2,340 occasions, as compared with 1,160 occasions two years ago, and 1,969 last year. Among the larger drainage systems dealt with were those of the Victoria Infirmary, the United Co-operative Baking

Society, Ltd., the Scottish Grain Distilling Company, Ltd., the new infant school at Shawlands Academy, and the temporary school at Braehead Street.

HOUSING.

Glasgow Improvement Scheme, 1926.—The area in this Division included in this scheme was that known as Rose Street, in which there were 163 houses with a population of 770. All the tenants have been rehoused or have found accommodation elsewhere. 147 of the houses have been demolished, and there are now only 16 remaining to be dealt with. These latter are, of course, closed.

Glasgow Improvement Scheme, 1928.—There were no areas in this Division included in this scheme, but the preparation and submission of evidence with reference to two areas—Coulter's Lane and Dornoch Street—in the Eastern Division were undertaken. These areas contained a total of 171 houses with a population of 766.

Repair of Houses.—570 houses were inspected and, of these, 415 were found not to be in a reasonable state of repair. Notices were accordingly served upon the owners or factors to have the work carried out. In connection with this work 1,738 visits and revisits were paid.

Bug Infestation.—A matter which has given the Department a considerable amount of trouble is the question of bug infestation of the new houses. The bugs were conveyed from the old houses in the tenants' furniture and bedding, and very soon the walls of the new houses became infested, particularly at the picture-rails, and many of these had to be taken down and extensive measures taken for the extermination of the vermin. It thus became evident that some action for the extermination of the bugs in the furniture and bedding, before its transfer to the new house, would require to be carried out, and this is now being done with satisfactory results. It has also been found that a source of bug infestation has been the purchasing by the tenants of second-hand furniture and pictures, especially the latter, after they have entered into occupancy. Wherever infestation was traced to this source steps were at once taken to have the bugs exterminated and the infested articles cleaned and disinfected and all tenants are advised of the danger of purchasing such articles.

Rent Restrictions.—Thirty-seven applications for certificates that houses were not in a reasonable state of repair were received, 35 of which were granted, and two refused.

New Houses.—Apart from rehousing schemes, 422 houses, built by the Corporation at Govanhill, were occupied during the year. In addition to these, there has been a further increase in the number of houses built by private enterprise, the total for the year being 735, as compared with 591 last year. Of these, 20 are in Ward 33, 28 in Ward 34, 8 in Ward 36, and 679 in Ward 37. The houses are of four apartments and upwards.

Dirty Houses.—In addition to the supervision of the housing schemes, the two Lady Inspectors make regular house-to-house visitations throughout the Division. In connection with this work 5,648 first visits and 644 revisits were paid, resulting in the cleansing of 317 dirty houses, while, in addition, the bedding, &c., in 84 houses was also cleaned.

Verminous and Dirty Children.—In connection with this work, which is also undertaken by the Lady Inspectors, 27 schools are visited—20 fortnightly and 7 monthly. The school visits numbered 429 and 7,272 children were inspected. Of these, 851 were found to be in a verminous condition and 263 in a dirty condition. The homes of these children, numbering 792, were visited and notices were served or warnings given to the parents or guardians. In one case where the parents had been repeatedly warned, proceedings were instituted in the Sheriff Court at the instance of the Education Authority, the parents being put on probation for six months. In another instance, where the child's condition was due to the fact that the mother was in hospital, arrangements were made to have the child cleaned at the Reception House. In all other cases the notices and warnings proved effective, as on subsequent visits to the schools the children were found clean and free from vermin. In connection with the visits to the homes of the children, it was found necessary to warn the parents in 52 instances regarding the dirty condition of their houses, while in 51 cases warnings were given regarding dirty bedding. On being revisited, the houses and bedding were found to have been cleaned.

Piggeries.—The piggery referred to in last year's report, which had been complained of as being in too close proximity to a new housing scheme, has now been removed, while the keeping of pigs at the Victoria Infirmary has been discontinued. The other piggeries on inspection were found to be clean and to comply with the bye-laws.

Common Lodging-houses.—The usual supervision of these houses was maintaind, 25 day visits and 12 night visits being paid. On all occasions it was found that the bye-laws were being complied with.

Farmed-out Houses.—Proceedings were taken against the keeper of 11 farmed-out houses at 38 Adelphi Street and 3 farmed-out houses at 3 Hospital Street, for failing to provide and maintain the necessary furniture and furnishings as required by the bye-laws. A fine of £2 was imposed in the first case, and £1 in the second case, with, in addition, a continuing penalty of 10s. per day in each case so long as the keeper should fail to comply with the bye-laws. The farmer ultimately decided to give up the houses. There are thus only 82 registered houses now in the Division.

Cleansing of Closes, Stairs, &c.—Proceedings were taken in three instances against tenants who failed to clean the closes or stairs in connection with premises occupied by them. In one case a fine of 2s. 6d. was imposed, while in the other two cases the accused were admonished. In one of the latter cases, however, the accused still declined to have the necessary cleansing carried out, and, on again being brought before the Court, was fined 20s.

2,609 visits were paid for the purpose of enforcing the bye-laws, and 720 cards, fixing the tenants' rotation of cleansing, were served.

Limewashings.—2,817 properties were inspected and the factors or owners of 1,004 properties were called upon to limewash the common closes, staircases, &c.

Brokers' Premises.—Eighteen premises regarding which applications for licences to carry on the business of Licensed Broker, were inspected and reported upon to the Licensing Court.

Water Storage Cisterns.—The water storage cisterns at 365 properties were inspected, and at 127 properties the cisterns were found to be in a dirty condition or not adequately protected against pollution. The necessary cleansing operations and making of the cisterns dustproof were subsequently carried out.

Workshops.—Twenty workshops were measured and registered during the year, and there are now 546 on the register. To these, 1,522 visits were paid; 29 were found to be dirty; one defective in ventilation; and, in five others, minor nuisances were discovered. On notices being served, these defects were subsequently remedied.

Bakehouses.—408 visits were paid to bakehouses, of which there are 102 on the register, six having been added during the year. Nine were found to be dirty, and in three nuisances of a minor nature were discovered. These irregularities were remedied on the issue of notices.

Outworkers.—The names of 85 outworkers have been returned, and to the homes of these 204 visits were paid. The premises were found on all occasions to be clean and free from infectious disease.

Offensive Trades.—The business of a soap boiler is the only offensive trade in the Division. The operations are being carried on without giving rise to nuisance.

DUNCAN THOMSON,
Divisional Sanitary Inspector.

27th March, 1929.

SOUTH-WESTERN DIVISION.

Nuisances.—The nuisances registered and removed numbered 13,867 and 13,840 respectively, compared with 15,589 and 15,600 in the previous year, and the inspections in connection therewith amounted to 172,346, as compared with 179,167 in 1927. Proceedings were successfully instituted in the Sheriff Court against a house factor for failing to remove a nuisance consisting of dampness in a house wall, and, in addition to being compelled to remove the complaint, he was found liable in expenses. The house was vacated in July, and, though it has been in serviceable condition almost since then, the factor has not relet it.

Complaint was made as to illnesses alleged to be caused by fumes given off by a gas heater in a bathroom in a tenement property. Part of the heater was found to be missing, and large volumes of fumes of partly-combusted gas were being freely given off into the bathroom, whence they found their way into the house above and into the common stair, into which the bathroom ventilated. The heater was repaired and ventilation to the outside air provided. The possibilities of carbon monoxide poisoning from defective gas heaters in imperfectly-ventilated bathrooms are so well known as to call for the greatest vigilance on the part of all concerned, and those possessing them should have them periodically inspected to ensure that they are in proper working order, and should in all cases see that the exhaust gases are led outside to the external atmosphere.

Half-a-dozen cases of illness occurring in two families in one tenement with symptoms resembling those of metallic poisoning pointed to a common source of contamination, and as the affected families resided in a housing scheme, in which, like most other new houses, the piping for the water supplies is of copper and not of lead, which was the material most commonly used formerly, it was considered prudent to take into consideration the question of the possible solvent action of the water on the copper. Samples taken from the cold and hot-water taps and the storage cisterns for the hot-water supplies were submitted to the City Analyst, the results ruling out the possibility of metallic poisoning by the water as the cause of the illnesses. These analyses are decidedly reassuring in view of the greatly increasing use of copper in connection with domestic water supplies.

Complaint was made in the late summer of smells from a sewage purification installation. The apparatus is somewhat out of date, and, although attempts have been made to improve it, occasionally in warm moist weather smells may be perceived in close proximity to the works. This plant will be scrapped at an early date and the sewage discharged directly into the large new sewer from Shieldhall, which is being pushed on with all expedition.

Pigeons roosting on and polluting window sills and waste and soil pipes on the back walls of a corner tenement gave rise in warm weather to a rather offensive nuisance, originating in the feeding of the pigeons by the tenants, thereby encouraging the birds to congregate in the vicinity of the windows of their own and their neighbours' houses.

House Drainage.—The condition of the drainage of tenements on the whole is very satisfactory. The existence of two standards of drain trapping is, however, open to objection on many grounds. In the cases of subsidy houses and some new houses, relaxation of the building bye-laws with respect to several matters, including the trapping of waste water drains, is, on application, granted by the Dean of Guild Court. Such modifications have been allowed in housing schemes in connection with which the Department of Health for Scotland have powers, independent of local courts, to modify certain building bye-laws which, in the light of modern practice, appear unduly stringent. The existence of two methods, in the absence of some recognised standard of prevention of hazard to health, denotes confusion of ideas and calls for a remedy; experience has shown that the elimination of the waste trap from the house drain, that is, the single-trap method of trapping safeguards to the fullest extent the health of the occupants of the houses. A national code of regulations applicable to house drainage is wanted to restore confidence and prevent possible abuses which can hardly be avoided where two standards operate.

HOUSING.

New Houses.—63 self-contained and semi-detached houses have been erected in Cardonald, Crookston, Dumbreck, and Pollokshields. Corporation houses, all of three and four apartments, completed and occupied number 218, of which 20 and 42 are at Langlands and Summertown Road Housing Schemes respectively and 156 at Brand Street Housing Scheme.

Slum Clearance.—The Improvement Schemes of 1923 and 1926, which, so far as they relate to the Division, include 183 and 139 houses respectively, a total of 322 houses, are all but completed, all the houses having been vacated, and, with the exception of those (29) at Newfield Lane (now (January) actually being pulled down), demolished. The houses evacuated or demolished during the year include, among others, St. James' Terrace, a notorious slum of 65 houses, and the 6 contiguous back lands entered from Pollok and Weir Streets.

Of the 340 families resident in these 322 houses, 261 (77 per cent.) were accommodated in rehousing schemes, 46 (13 per cent.) exchanged with others, who were "substituted" to rehousing schemes (that is, 90 per cent. to rehousing schemes), and 33 (10 per cent.) neither accepted the offer of new houses nor effected exchanges, some removing voluntarily and a few being ejected for non-payment of rent, &c.

1923 AND 1926 IMPROVEMENT SCHEMES.

(South-Western Division only).

Direct transfers to re-housing schemes, - - -	261	(77%)
Exchanges to re-housing schemes, - - - -	46	(13%)
	307	(90%)
Voluntary and other removals, &c., to houses elsewhere than in re-housing schemes, - - - - -	33	(10%)
	340	

Intermediate Housing Schemes.—Occupation of the 156 houses comprising the Brand Street Intermediate Housing Scheme (120 of three and 36 of four apartments) was commenced in January and continued till August, when the last house was tenanted. The number of inmates in the three apartments ranges from two to ten, and in those of four apartments from four to twelve. These houses absorbed 9 only of the families included in lists in the office records of 234 grossly overcrowded houses, the occupiers of which appear to be eligible for intermediate houses, for which the demand is very great.

Overcrowding.—There is reason to believe that, on the whole, overcrowding persists as intensively and extensively as in recent years; the remedy appears to be the provision of more houses at rents which the lower-paid workers can afford to pay, and among whom the two-families-a-house evil mostly prevails. The consideration in the autumn of this year of the results of the revisitation of 234 houses of those noted in office records as being grossly overcrowded throws a rather interesting sidelight on overcrowding. These, which were abstracted from the overcrowding lists of the previous two years were looked upon as being occupied by families eligible for rehousing in the intermediate housing schemes inaugurated during the year, both as regards income (not more than £4 a week) and size of family (in the case of one-apartment houses ranging from 5 to 13 and of two apartments from 9 to 14 inmates), and were reinspected with a view to verifying the conditions in the hope of thereby expediting, if possible, such transferences as were likely to take place. The following facts emerged:—9 families had been rehoused in intermediate and 5 in ordinary housing schemes; 28, offered houses in such schemes, declined them; 31 removed to other (larger) houses; 3 from lodgings to houses of their own; and 6 to whereabouts unknown. In other words, where changes of occupancy occurred or were offered, 6 per cent. of the families were accommodated in Corporation houses, 12 per cent. were unable or unwilling to accept the offers of such houses, and 15 per cent. removed to larger houses elsewhere than in Corporation schemes. That is to say, that in two years changes of occupancy occurred in 23 per cent. of these 234 grossly overcrowded houses, and that in the case of 12 per cent. of them the tenants declined to accept houses offered them.

Rent Restrictions Acts.—20 applications by tenants for certificates and one by a landlord for a report were granted, compared with 13 and 1 respectively in the preceding year. In the two instances where landlords instituted proceedings in the Small Debt Court the tenants successfully defended the actions against them. In one case, consequent on an inspection under the Rent Restrictions Acts, and where, when disrepair is found, the usual procedure of serving a notice under the Housing Act was followed, the factor on receipt of the notice notified the tenant in the following terms:—"Please note, as mentioned to-day, that our association instructs a ten per cent. increase of rent. This automatically makes your next inclusive quarterly rent........." The house was a decontrolled one and, although the tenant was not in arrears of rent, the factor terminated the tenancy.

Sanitary Accommodation.—Every tenement in the Division has water-closet accommodation. The work of introducing additional sanitary conveniences in tenements is, and has been throughout the post-war period, attended with many difficulties, which need not be here enlarged on, and, while every effort is made to improve matters as opportunity occurs, progress in this connection under existing conditions must necessarily be slow. 12 additional water closets were introduced during the year.

Conversions to Water Carriage System.—Three closets on the conservancy system were replaced by water closets and two were abolished.

Privies, Earth Closets, and Privy Middens.—The number of privies and privy middens is 23 and 8 respectively, being a reduction of 5 in the former as compared with last year. There are no earth closets.

Water Closets used in Common, serving 2, 3, 4, *and* 5 *or more Tenants.*—These number 1,088, 1,889, 1,172, and 369, which is substantially the same as last year; the total, 4,518 is less by 41 than in 1927, slum clearance demolitions accounting for the difference.

Houses without Water Supply and Sink inside the House—A decrease of 5 falls to be recorded as compared with the previous year, the number being now 30. A water supply and sink were introduced into a house consequent on an intimation under the Police Act.

Dry Closets used in Common.—These number 6, 4 of which serve 2 tenants, and 1 each 3 and 4 tenants respectively.

Privy Middens used in Common.—In the three instances where privy middens obtain, these serve two tenants each.

Ashpits serving 2, 3, 4, *and* 5 *or more Tenants.*—The total ashpits used in common number 1,478, 10 being common to 2, 1 to 3, 10 to 4, and 1,457 to 5 or more tenants respectively, being almost identical with last year. Almost the whole of the ashpits are in the Govan area, powers for the conversion of which into ashbins were obtained by a recent Provisional Order.

Common Lodging-houses.—" Model " lodging-houses, all of which are for males, number 4, the same as last year, and, apart from a few minor irregularities, have been well conducted. They contain a total of 1,500 beds, which more than meet the demand, as on an average during the year 72 per cent. only of the sleeping accommodation was taken up. The charges, which are from 8d. to 1s. a night, are similar to those of the preceding year (the maximum charge prescribed by the Provisional Order regulating charges is 1s. a night). 15 per cent. of the lodgers are in receipt of Parish relief, which consists of 2s. in money and vouchers to the value of 9s. a week. In the early spring a rather serious state of affairs was discovered at the Sailors' Home, which is technically a common lodging-house. The home, which is a particularly good one of its kind, was found to contain 56 Lascar seamen and firemen, for whose suitable accommodation no adequate provision had been made, but who appeared literally to have been dumped on the premises. The registered keeper was at once communicated with regarding his failure to comply with the bye-laws, particularly with respect to overcrowding, the want of bedsteads, sweeping and scrubbing floors, the storing of baggage in the passages, and insufficient w.c. accommodation. The explanation forthcoming was that the crew of a ship discharged from a continental port had been suddenly thrust upon him at a moment's notice, and that the Asiatic Sailors' Home, controlled by the same keeper, having its alloted number of inmates, there appeared to him to be no alternative but to take the men in temporarily. The premises, admirable in many respects, are not properly adapted for the accommodation of Lascars, and, while an attempt was made to keep the house clean during their short stay, there were evident conditions which pointed to the unsuitability of the premises for the purpose to which they had been put. Steps were at once taken by the keeper to have the premises evacuated, which was done in a day or two, after having had his attention drawn to the consequences which might ensue.

Farmed-out Houses.—Regular supervision has been exercised over the farmed-out houses, of which there are 12, situated in one tenement, the same number as last year. The bye-laws are strictly enforced, particularly with regard to the provision by the keeper of the prescribed furniture and furnishings. The weekly rents, which last year were 12s. and 14s. respectively, are now 7s. 6d. for a one apartment and 10s. for a two-apartment house, which are fixed by the Local Authority in accordance with the requirements of the 1927 Provisional Order, when the application for the renewal of registration was granted.

Ticketed Houses and Houses Let in Lodgings.—There is a diminution in the number of both these classes of regulated houses, due, as regards the former, to slum clearance, and to removals in the case of the latter. Under existing housing conditions no good purpose will be served by registering all houses let in lodgings or occupied by members of more than one family in districts where formerly such registration was made, assuming that such a course is practicable under the changed conditions which now prevail. Meantime ticketed houses and registered houses let in lodgings are visited by day to ensure that cleanliness is maintained, and by night to control at least, if not to suppress, overcrowding.

Schools.—The sanitary condition of schools is satisfactory.

Factories and Workshops.—Factories, other than factory bakehouses, were visited when circumstances warranted inspection. In one factory bakehouse (all of which are regularly inspected) the owners experienced difficulty in getting their employees to maintain that high standard of cleanliness of premises and fitments which is a feature of large factory bakehouses, and, following upon representations of the department, engaged a special staff of charwomen, through whose daily cleansing operations the desired improvement has been attained. Compared with last year, the number of workshops and workplaces now on the register is larger, the increment being due in part to the increase in motor garages, many of which are either workshops or workplaces, and in connection with which a survey was made, special attention being given to the ventilation of these premises. Intimations were served upon 111 occupiers of workshops regarding dirty walls and floors, and were duly attended to.

Dirty Houses and Bedding.—Notices were served upon 103 householders whose houses were not in a cleanly condition and on 51 whose bedding was dirty, and, with the exception of the case immediately hereinafter referred to, were attended to. A householder was prosecuted for failing to cleanse and purify dirty bedding and clothing in his house, but inasmuch as no penalty is exigible until there is a continuation of the offence after conviction, and as the cleansing operations called for were completed only on the day on which the Magistrates heard the case, the matter ended with the recording of the conviction. Under the Confirmation Act of 1904, a person keeping a *dirty house* is liable in a penalty for failing to comply with the sanitary inspector's notice, but where the offence is that of having *dirty bedding* in a house the offender is not liable in a penalty until after conviction. With a view to uniformity of practice a clause has been inserted in the Provisional Order now before Parliament to get rid of this anomaly. There are a number of habitual offenders, by whom the receipt of a notice is accepted as a matter of routine. Notices, except in rare instances, are complied with.

The case of aged and infirm people living alone occasionally presents difficulties which will remain so long as these almost helpless people live in dwelling-houses. In many cases their removal to an institution would be advantageous to everyone concerned, and while in these particular instances some form of compulsory removal appears at first sight to be highly desirable, the danger of the possibility of the abuse of such a power far outweighs any benefit likely to accrue from it. A few inquiries here and there by the officers of the department frequently result in such cases being brought under the notice of relatives or one of the various charitable agencies, with good effect, and in the very rare event of failure in these directions the resources of the department could be drawn on and the work done, any cost so incurred being recovered if the circumstances warranted such a proceeding.

Tents and Vans.—In addition to the insistence on the provision of suitable sanitary accommodation, daily supervision was exercised over the showmen's vans and their inmates while located at Bellahouston during the Fair holidays, particularly with respect to the possible occurrence of smallpox in such as had come from Forfarshire or from across the Border. No cases of illness were recorded. The vans of travelling showmen visiting the City in the usual course of their calling are the only vans in the Division used as dwelling-houses, and some of these are models of neatness, compactness, and cleanliness.

Seasonal Workers.—A proposal to use premises as temporary living quarters for potato diggers was rejected on the ground of their general unfitness for that purpose. These field workers, it is understood, were ultimately housed at a farm beyond the City boundary.

Rat Destruction.—" Rat Week " was duly observed in April, and served as a reminder for increased activity in the work of exterminating rats, and in this connection a large number of leaflets describing the best means of destroying the pests and making premises rat-proof were served upon occupiers of all places likely to be infested or overrun with rats. While " Rat Week " undoubtedly gives zest to the work of eliminating rats, this forms part of the routine work of the sanitary officers, whose duties include the supervision of such suitable preventive measures as may be required.

Burial Grounds.—The two public cemeteries, which belong to one company, are visited regularly, and at the one where there is common ground the bye-laws in connection therewith are strictly complied with. Nine applications for the modification of the bye-laws relative to the depth between the surface of the ground and the topmost coffin in a grave before it is finally closed were granted in one of the cemeteries, where, under a special bye-law, such relaxation is expressly provided for, on compliance with the conditions usually imposed in such cases, and one was refused. A parish churchyard, now, of course, under the charge of the Corporation, which is practically, though not officially, closed, the right of interment being reserved for a very few lairholders, was generally supervised, and in it one interment (the right to burial being duly authenticated) took place during the year.

General.—Among the officers' other duties were included the carrying out of measures for the prevention of infectious disease, prompt attention to all oral or written complaints received, the supervision of offensive trades, the enforcement of the provisions of the Police Acts with respect to whitewashing of staircases, cleansing of closes and stairs, and examination of dirty school children, the oversight of places of public entertainment as regards their general cleanliness, the application of the Rag Flock Acts, visits to all houses in which deaths occurred, the suppression of flies at stable dungpits, the inspection of piggeries, and notification to other municipal departments of such defects as come to their knowledge and require attention. Details of these operations, none of which calls for comment, will be found in the appended Table XXIII.

JAMES REID,
Divisional Sanitary Inspector.

31st January, 1929.

APPENDIX.

TABLE I.—GLASGOW, 1928.—ESTIMATED POPULATION IN EACH MUNICIPAL WARD, ACREAGE, AND PERSONS PER ACRE.

MUNICIPAL WARDS.	POPULATION.				Acreage.	Persons per acre (including Institutions and Shipping.)
	Without Institutions and Shipping.	Institutions.	Shipping.	Total.		
1. Shettleston and Tollcross, -	38,921	85	...	39,006	1,022	38
2. Parkhead, - -	40,164	1,246	...	41,410	883	47
3. Dalmarnock, -	41,656	26	...	41,682	288	145
4. Calton, - -	35,710	1,988	...	37,698	333	113
5. Mile-end, - -	25,212	46	...	25,258	191	132
6. Whitevale, - -	24,489	530	...	25,019	176	142
7. Dennistoun, -	23,424	332	...	23,756	280	85
8. Provan, - -	36,182	781	...	36,963	1,284	29
9. Cowlairs, - -	24,502	1,976	...	26.478	456	58
10. Springburn, -	21,431	3,022	...	24,453	2,261	11
11. Townhead, - -	28,503	1,590	...	30,093	175	172
12. Exchange, - -	16,415	2,676	...	19,091	289	66
13. Blythswood, -	13,321	2.415	75	15,811	242	65
14. Anderston, - -	28,356	1,055	1,851	31.262	422	74
15. Sandyford, - -	21,885	430	...	22,315	152	147
16. Park, - - -	22,269	219	...	22,488	272	83
17. Cowcaddens, -	39,839	687	9	40,535	488	83
18. Woodside, - -	36,689	980	...	37,669	170	222
19. Ruchill, - -	31,584	1,023	2	32,609	1,766	18
20. North Kelvin, -	23,877	20	...	23,897	146	164
21. Maryhill, - -	25,850	1,053	...	26,903	1,391	19
22. Kelvinside, -	23,379	1,060	...	24,439	1,127	22
23. Partick (East), -	30,478	1,061	...	31,539	268	118
24. ,, (West), -	27,212	105	152	27,469	357	77
25. Whiteinch, -	47,514	862	12	48.388	2,696	18
26. Hutchesontown, -	42,194	30	...	42,224	389	109
27. Gorbals, - -	50,234	715	...	50,949	252	202
28. Kingston, - -	32,856	201	172	33,229	285	117
29. Kinning Park, -	38,155	563	491	39,209	379	103
30. Govan, - -	38,701	347	13	39,061	529	74
31. Fairfield, - -	33,572	2,244	14	35,830	1,402	26
32. Pollokshields, -	29,759	1,977	...	31,736	4.678	7
33. Camphill, - -	21,554	105	...	21,659	366	59
34. Pollokshaws, -	23,233	...	...	23,233	1,847	13
35. Govanhill, - -	34,117	234	...	34,351	365	94
36. Langside, - -	18,955	781	...	19,736	557	35
37. Cathcart, - -	19,660	...	...	19,660	1,327	15
CITY, - -	1,111,852	32,465	2,791	1,147,108	29,511	39

TABLE II.—Glasgow, 1928.—INHABITED and UNOCCUPIED HOUSES in each Municipal Ward.

Municipal Wards.	Inhabited Houses.*				Empty Houses.
	1928.	1927.	Decrease.	Increase.	
1. Shettleston and Tollcross, -	8,032	7,441	...	591	5
2. Parkhead, - - -	8,731	8,528	...	203	2
3. Dalmarnock, - - -	9,065	9,130	65	...	2
4. Calton, - - - -	8,195	8,304	109	...	12
5. Mile-end, - - - -	5,545	5,665	120	...	2
6. Whitevale, - - -	5,502	5,542	40	...	3
7. Dennistoun, - - -	5,848	5,683	...	165	11
8. Provan, - - - -	7,946	7,942	...	4	8
9. Cowlairs, - - - -	5,642	5,651	9	...	2
10. Springburn, - - -	4,594	4,368	...	226	5
11. Townhead, - - -	6,464	6,496	32	...	11
12. Exchange, - - -	3,864	3,974	110	...	9
13. Blythswood, - - -	2,858	2,904	46	...	20
14. Anderston, - - -	6,314	6,338	24	...	7
15. Sandyford, - - -	4,820	4,852	32	...	18
16. Park, - - - -	5,199	5,187	...	12	19
17. Cowcaddens, - - -	8,989	9,080	91	...	15
18. Woodside, - - -	8,435	8,475	40	...	10
19. Ruchill, - - - -	7,067	6,814	...	253	2
20. North Kelvin, - - -	5,730	5,733	3	...	19
21. Maryhill, - - - -	5,554	5,428	...	126	5
22. Kelvinside, - - -	5.832	5,727	...	105	52
23. Partick (East), - - -	6,909	6,902	...	7	20
24. ,, (West), - -	6,497	6,494	...	3	8
25. Whiteinch, - - -	10,434	9,123	...	1,311	10
26. Hutchesontown, - -	9,574	9,449	...	125	...
27. Gorbals, - - - -	10,732	10,848	116	...	15
28. Kingston, - - - -	7,026	7,216	190	...	11
29. Kinning Park, - - -	8,463	8,376	...	87	4
30. Govan, - - -	7,977	7,741	...	236	10
31. Fairfield, - - - -	7,336	7,350	14	...	3
32. Pollokshields, - - -	7.253	7,187	...	66	25
33. Camphill, - - - -	5,716	5,605	...	111	11
34. Pollokshaws, - - -	5.503	5,240	...	263	3
35. Govanhill, - - -	8,027	7,545	...	482	1
36. Langside, - - - -	4,860	4,783	...	77	7
37. Cathcart, - - - -	4,774	4,398	...	376	6
City, - - -	251,307	247,519	...	3,788	373

* Includes Inhabitant Occupiers.

TABLE III.—GLASGOW.—LININGS GRANTED BY DEAN OF GUILD COURT IN YEARS FROM 1915 TO 1928 IN RESPECT OF HOUSES.

Year ending 31st August.	No. of Apartments.						Total.
	1.	2.	3.	4.	5.	6.	
1915, ...	63	156	120	32	35	48	454
1916, ...	1	...	2	...	12	1	16
1917, ...	...	...	...	...	...	...	...
1918, ...	...	64	28	...	...	...	92
1919, ...	...	...	144	78	...	...	222
1920, ...	...	12	1,239	414	214	57	1,936
1921, ...	...	...	1,176	981	240	34	2,431
1922, ...	...	...	65	99	39	31	234
1923, ...	...	680	286	205	104	46	1,321
1924, ...	...	357	991	605	745	82	2,780
1925, ...	...	504	674	111	44	61	1,394
1926, ...	...	318	4,649	967	769	93	6,796
1927, ...	...	228	2,889	1,209	802	55	5,183
1928, ...	..	132	4,184	2,238	314	17	6885

TABLE IV.—ABSTRACT OF METEOROLOGICAL OBSERVATIONS TAKEN AT SPRINGBURN PUBLIC PARK.

Months. 1928.	Temperature.			Rainfall.		Sunshine.
	Highest Temperature in Shade.	Lowest Temperature in Shade.	Mean Temperature.	No. of Days it fell.	Amount Collected, in inches.	Hours.
January, ...	52	20	39·6	31	8·72	35·2
February, ...	56	29	39·7	20	4·24	63·1
March, ...	53	23	39·6	23	3·07	43·3
April, ...	62	31	45·2	17	1·35	109·5
May, ...	72	33	50·7	11	2·16	172·8
June, ...	75	34	51·4	24	5·51	173·9
July, ...	68	40	56·3	20	2·81	124·7
August, ...	79	41	58·0	22	3·70	127·3
September, ...	72	32	52·6	16	3·34	129·2
October, ...	63	29	47·0	25	5·83	68·3
November, ...	59	29	43·8	25	4·77	39·8
December, ...	52	25	37·8	21	3·85	34·2
1917, ...	74	20	46·7	194	36·67	1,122
1918, ...	78	10	47·5	237	41·36	1,082
1919, ...	75	12	46·2	186	30·93	1,341
1920, ...	75	26	48·1	230	43·88	1,030
1921, ...	82	22	48·5	249	43·23	1,228
1922, ...	79	31	46·8	228	32·87	1.089
1923, ...	83	20	46·4	260	44·64	1,036
1924, ...	74	18	46·1	256	39·72	973
1925, ...	83	18	46·7	222	38·24	1,224
1926, ...	86	22	47·7	242	45·91	1,174
1927, ...	77	20	46·8	245	49·12	1,162
1928, ...	79	20	46·8	255	49·35	1,121

The records for years previous to 1921 were taken at Glasgow Observatory.

TABLE V.—GLASGOW.—BIRTHS AND BIRTH-RATES *per Million* IN EACH WARD, FOR THE YEAR 1928, AND NUMBER AND PERCENTAGE OF ILLEGITIMATE BIRTHS.

MUNICIPAL WARDS.	Births. 1928.	Illegitimate Births		Birth-rate 1928.	Birth-ra 1927.
		No.	°/₀ Total Births.		
1. Shettleston and Tollcross, ...	869	55	6·3	22,327	21,04
2. Parkhead, ...	986	59	6·0	24,549	24,54
3. Dalmarnock, ...	1,175	59	5·0	28,207	27,38
4. Calton, ...	1,008	90	8·9	28,227	27,91
5. Mile-end, ...	720	43	6·0	28,558	29,96
6. Whitevale, ...	585	43	7·4	23,888	23,99
7. Dennistoun, ...	375	18	4·8	16,009	13,88
8. Provan, ...	941	44	4·7	26,007	26,68
9. Cowlairs, ...	484	24	5·0	19,753	17,23
10. Springburn, ...	438	18	4·1	20,438	22,42
11. Townhead, ...	554	64	11·6	19,437	20,49
12. Exchange, ...	430	57	13·3	26,196	27,72
13. Blythswood, ...	244	33	13·5	18,317	22,53
14. Anderston, ...	698	45	6·4	24,616	24,80
15. Sandyford, ...	393	33	8·4	17,958	20,42
16. Park, ...	223	35	15·7	10,014	11,52
17. Cowcaddens, ...	1,081	88	8·1	27,134	27,53
18. Woodside, ...	896	55	6·1	24,421	22,62
19. Ruchill, ...	752	35	4·7	23,810	24,13
20. North Kelvin, ...	418	20	4·8	17,506	16,49
21. Maryhill, ...	575	33	5·7	22,244	21,49
22. Kelvinside, ...	185	6	3·2	7,913	8,97
23. Partick (East), ...	555	33	5·9	18,210	19,57
24. ,, (West), ...	535	35	6·5	19,660	18,64
25. Whiteinch, ...	815	40	4·9	17,153	16,89
26. Hutchesontown, ...	1,076	56	5·2	25,501	24,80
27. Gorbals, ...	1,213	95	7·8	24,147	27,54
28. Kingston.	845	67	7·9	25,718	26,28
29. Kinning Park, ...	877	71	8·1	22,985	25,02
30. Govan, ...	1,029	83	8·1	26,588	23,69
31. Fairfield, ...	655	28	4·3	19,510	19,97
32. Pollokshields, ...	351	22	6·3	11,795	11,56
33. Camphill, ...	211	3	1·4	9,789	10,12
34. Pollokshaws, ...	353	15	4·2	15,194	15,95
35. Govanhill, ...	594	30	5·1	17,411	16,87
36. Langside, ...	215	6	2·8	11,343	11,04
37. Cathcart, ...	214	4	1·9	10,885	11,42
Institutions, &c., ...	81	26	—	—	—
CITY, ...	23,649	1,571	6·6	20,616	20,85

BLE VI.—GLASGOW.—DEATHS AND DEATH-RATES *per Million* IN EACH MUNICIPAL WARD, FOR THE YEAR 1928, AND CORRESPONDING RATES FOR 1927 AND 1926.

MUNICIPAL WARDS.	Deaths. 1928.	Death-rates.		
		1928.	1927.	1926.
1. Shettleston and Tollcross, ...	444	11,408	12,951	12,675
2. Parkhead, ...	527	13,121	12,923	12,575
3. Dalmarnock, ...	644	15,460	14,564	15,249
4. Calton, ...	711	19,910	17,162	16,239
5. Mile-end, ...	456	18.087	16,265	17,565
6. Whitevale, ...	366	14,945	16,134	13,824
7. Dennistoun, ...	297	12,679	10.630	11,326
8. Provan, ...	478	13,211	12,609	13,835
9. Cowlairs, ...	252	10,285	12,141	11,287
0. Springburn, ...	227	10,592	11,139	9,890
1. Townhead, ...	415	14,560	13,928	14,591
2. Exchange, ...	294	17,910	18,244	17,590
3. Blythswood, ...	215	16,140	18,696	16,032
4. Anderston, ...	394	13,895	16,125	14,651
5. Sandyford, ...	329	15,033	15,023	14,534
6. Park, ...	292	13,112	14,042	11,402
7. Cowcaddens, ...	629	15,789	15,455	15,252
8. Woodside, ...	592	16,136	14,105	14.922
9. Ruchill, ...	391	12,380	13,364	10,516
0. North Kelvin, ...	250	10,470	10.338	11,461
1. Maryhill, ...	297	11,489	11,399	11,715
2. Kelvinside, ...	246	10,522	10,367	10,120
3. Partick (East), ...	431	14,141	13,268	13.458
4. ,, (West), ...	295	10.841	11,654	10,470
5. Whiteinch, ...	474	9,976	9,508	10,217
6. Hutchesontown, ...	562	13,319	13,710	13,555
7. Gorbals, ...	842	16,762	16,185	17,164
8. Kingston, ...	526	16,009	16.388	15,308
9. Kinning Park, ...	553	14,494	13,638	13,485
0. Govan, ...	578	14.935	14,138	13,908
1. Fairfield, ...	377	11,230	10,554	11,425
2. Pollokshields, ...	328	11,022	10,140	10,578
3. Camphill, ...	246	11,413	12,064	11,151
4. Pollokshaws, ...	248	10,674	12.564	12.471
5. Govanhill, ...	364	10,669	10,976	9,949
6. Langside, ...	202	10,657	12,651	9,241
7. Cathcart, ...	193	9,817	8,778	8,706
Institutions, &c., ...	736	—	—	—
		—	—	—
CITY, ...	15,701	13,687	13,655	14,186

TABLE VII.—GLASGOW.—NUMBER OF OUTWARD AND INWARD TRANSFER DEATH FOR THE YEAR 1928.

CAUSE OF DEATH.	OUTWARD TRANSFERS.	INWARD TRANSFERS
1. Enteric Fever, ...	1	...
31A Typhus Fever, ...	...	...
2. Smallpox, ...	...	...
3. Measles, ...	4	1
4. Scarlet Fever, ...	6	...
5. Whooping-cough, ...	1	2
6. Diphtheria, ...	16	1
7. Influenza, ...	...	1
8. Encephalitis Lethargica, ...	7	3
9. Meningococcal Meningitis, ...	8	...
31B Erysipelas, ...	8	2
10. Tuberculosis of Respiratory System, ...	32	59
11A Tuberculous Meningitis, ...	14	5
11B Abdominal Tuberculosis, ...	11	4
11C Other Tuberculous Diseases, ...	17	7
12. Cancer (Malignant Disease), ...	236	14
13. Rheumatic Fever, ...	6	...
14. Diabetes, ...	17	1
15. Cerebral Hæmorrhage, etc., ...	49	31
31C Meningitis (not Tuberculous), ...	13	3
31D Other Nervous Diseases, ...	57	107
16. Heart Disease, ...	93	95
17. Arterio-sclerosis, ...	13	27
31E Other Circulatory Diseases, ...	13	3
18. Bronchitis, ...	24	11
19. Pneumonia (all forms), ...	82	26
20. Other Respiratory Diseases, ...	24	11
21. Ulcer of Stomach or Duodenum, ...	47	6
22. Diarrhœa, etc. (under 2 years), ...	11	2
23. Appendicitis, ...	62	1
24. Cirrhosis of Liver, ...	6	1
25. Acute and Chronic Nephritis, ...	58	15
26. Puerperal Sepsis, ...	16	...
27. Other Diseases and Accidents of Pregnancy and Parturition, ...	15	...
28. Congenital Debility and Malformation, Premature Birth, ...	64	2
29 and 30. Suicide, and other Deaths from Violence, ...	156	61
31. Other Defined Diseases, ...	389	47
32. Causes Ill-Defined or Unknown, ...	15	16
ALL CAUSES, ...	1,591	565

ABLE VIII.—GLASGOW.—DEATHS AND DEATH-RATES *per Million* FROM DIFFERENT AUSES, FOR THE YEAR 1928, AND CORRESPONDING RATES FOR 1927, 1926, AND 1921-1925.

CAUSE OF DEATH.	DEATHS.	ANNUAL DEATH-RATE PER MILLION.			
	1928.	1928.	1927.	1926.	1921-1925.
1. Enteric Fever, ...	10	9	9	15	11
31A Typhus Fever, ...	—	—	—	1	1
2. Smallpox, ...	—	—	—	—	1
3. Measles, ...	376	328	272	389	476
4. Scarlet Fever, ...	34	30	39	81	64
5. Whooping-cough,... ...	381	332	322	165	460
6. Diphtheria, ...	140	122	100	120	122
7. Influenza,...	210	183	180	350	306
8. Encephalitis Lethargica,	36	31	26	*	*
9. Meningococcal Meningitis,	68	59	58	44	46
31B Erysipelas, ...	38	33	26	45	50
10. Tuberculosis of Respiratory System, ...	954	832	838	861	1,005
11A Tuberculous Meningitis, ...	161	140	142	140	163
11B Abdominal Tuberculosis,	64	56	60	67	103
11C Other Tuberculous Diseases,	120	105	99	104	122
12. Cancer (Malignant Disease),	1,430	1,247	1,328	1,264	1,195
13. Rheumatic Fever, ...	54	47	67	46	46
14. Diabetes, ...	103	90	104	†	†
15. Cerebral Hæmorrhage, etc.,	944	823	897	703	736
31C Meningitis (not Tuberculous),	67	58	67	88	105
31D Other Nervous Diseases,...	582	507	443	707	753
16. Heart Disease, ...	1,991	1,736	1,638	1,394	1,245
17. Arterio-sclerosis, ...	388	338	324	698	575
31E Other Circulatory Diseases,	89	78	85		
18. Bronchitis, ...	635	554	598	707	880
19. Pneumonia (all forms), ...	1,801	1,570	1,585	1,596	1,662
20. Other Respiratory Diseases,	178	155	181	171	206
21. Ulcer of Stomach or Duodenum, ...	123	107	85	†	†
22. Diarrhœa, etc. (under 2 yrs),	334	291	301	†	†
23. Appendicitis, ...	76	66	76	85	94
24. Cirrhosis of Liver, ...	36	31	31	31	35
25. Acute and Chronic Nephritis,	442	385	335	370	368
26. Puerperal Sepsis,... ...	89	78	54	63	68
27. Other Diseases and Accidents of Pregnancy and Parturition, ...	107	92	85	76	93
28. Congenital Debility and Malformation, Premature Birth, ...	873	761	773	811	896
29 and 30. Suicide, and other Deaths from Violence, ...	663	578	629	586	519
31. Other defined Diseases, ...	1,849	1,613	1,586	2,408	2,402
32. Causes ill-defined or unknown, ...	255	222	212		
Total, ...	15,701	13,687	13,655	14,186	14,808

* Included with "Other Nervous Diseases." † Included with "Other Defined Diseases."

See pages 28-29 of Annual Report for 1927 regarding new method of classification adopted as at 1st January, 1927, and effect on comparison of Rates.

TABLE IX—Glasgow, 1928.—DEATHS from

Disease.	Males.													Total Males.
	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+	
1. Enteric Fever, ...	1	2	1	—	—	—	1	1	1	1	—	—	—	8
31A. Typhus Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2. Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3. Measles, ...	50	102	31	1	1	1	—	—	—	—	—	—	—	186
4. Scarlet Fever, ...	—	7	6	1	—	1	—	1	1	—	1	—	—	18
5. Whooping-cough, ...	86	73	29	2	—	—	—	—	—	—	—	—	—	190
6. Diphtheria, ...	10	26	25	6	—	3	1	2	2	—	1	—	—	76
7. Influenza, ...	13	5	1	3	—	2	1	2	10	20	16	17	12	102
8. Encephalitis Lethargica, ...	—	—	—	1	—	4	2	4	3	4	5	—	—	23
9. Meningococcal Meningitis, ...	25	2	5	—	2	2	—	1	—	—	—	—	—	37
31B. Erysipelas, ...	2	—	—	1	—	—	—	—	1	4	9	8	1	26
10. Tuberculosis of Respiratory System,	7	10	6	6	12	51	74	104	98	87	55	13	1	524
11A. Tuberculous Meningitis, ...	13	18	16	16	7	4	3	1	—	1	—	—	—	79
11B. Abdominal Tuberculosis, ...	4	1	8	1	3	1	2	2	1	1	—	—	—	24
11C. Other Tuberculous Diseases, ...	2	7	9	5	1	8	5	10	3	5	7	1	—	63
12. Cancer (Malignant Disease), ...	—	—	—	—	—	1	5	13	45	102	221	214	91	692
13. Rheumatic Fever, ...	—	—	—	1	3	1	—	3	1	3	2	3	2	19
14. Diabetes, ...	—	1	—	—	—	2	1	2	8	—	11	9	4	38
15. Cerebral Hæmorrhage, etc.. ...	—	1	—	—	—	3	1	2	10	34	85	167	92	395
31C. Meningitis (not Tuberculous), ...	7	3	2	4	2	—	—	3	4	4	—	—	—	29
31D. Other Nervous Diseases, ...	76	10	6	12	8	8	15	29	49	49	40	35	23	360
16. Heart Disease, ...	3	—	—	3	3	17	10	26	60	119	235	307	162	945
17. Arterio-sclerosis, ...	—	—	—	—	—	—	—	—	1	10	66	88	71	236
31E. Other Circulatory Diseases, ...	3	—	—	—	1	—	—	2	3	10	22	9	2	52
18. Bronchitis, ...	33	4	9	1	1	2	—	8	24	25	71	88	77	343
19. Pneumonia (all forms), ...	296	179	57	15	6	11	29	49	91	86	112	63	38	1,032
20. Other Respiratory Diseases, ...	9	3	1	1	3	—	2	4	9	16	16	15	16	95
21. Ulcer of Stomach or Duodenum, ...	—	—	—	—	—	3	5	12	17	22	23	11	2	95
22. Diarrhœa, etc. (under 2 years), ...	175	27	—	—	—	—	—	—	—	—	—	—	—	202
23. Appendicitis, ...	—	1	3	8	5	5	4	3	2	5	4	3	—	43
24. Cirrhosis of Liver, ...	—	—	—	—	—	—	—	—	4	6	12	5	2	29
25. Acute and Chr. Nephritis, ...	—	—	5	1	1	1	—	5	24	46	55	49	23	210
26. Puerperal Sepsis. ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—
27. Other Diseases and Accidents of Pregnancy and Parturition, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—
28. Congenital Debility and Malformation, Premature Birth,	511	1	—	1	—	1	—	—	—	—	—	—	—	514
29 and 30. Suicide, and other Deaths from Violence, ...	8	13	31	30	14	15	21	37	53	76	72	43	13	426
31. Other Defined Diseases, ...	115	26	38	17	16	19	9	21	40	75	111	179	195	861
32. Causes Ill-Defined or Unknown, ...	9	4	3	7	4	1	4	3	20	30	47	29	1	162
All Causes, ...	1,458	526	292	144	93	167	195	350	585	841	1,299	1,356	828	8,134

FERENT DISEASES IN SEXES AND AT SEVERAL AGE-PERIODS.

DISEASE.	FEMALES.													Total Females.	Total Both Sexes.
	-1	-2	-5	-10	-15	-20	-25	-35	-45	-55	-65	-75	75+		
Enteric Fever, ...	—	—	—	—	—	1	—	—	1	—	—	—	—	2	10
Typhus Fever, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Smallpox, ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Measles, ...	68	80	37	4	—	—	—	—	1	—	—	—	—	190	376
Scarlet Fever, ...	—	1	5	5	2	1	1	—	—	1	—	—	—	16	34
Whooping-cough, ...	73	73	40	4	—	—	—	—	—	—	1	—	—	191	381
Diphtheria, ...	10	11	19	19	3	—	—	1	—	1	—	—	—	64	140
Influenza, ...	4	4	3	1	1	2	2	5	12	12	18	26	18	108	210
Encephalitis Lethargica, ...	—	—	—	—	2	—	2	4	2	1	1	1	—	13	36
Meningococcal Meningitis, ...	13	2	5	1	3	4	1	2	—	—	—	—	—	31	68
Erysipelas, ...	—	—	—	1	—	1	—	1	—	1	1	6	1	12	38
Tuberculosis of Respiratory System,	3	2	2	9	14	54	72	103	73	49	36	9	4	430	954
Tuberculous Meningitis, ...	10	17	23	15	10	4	1	1	1	—	—	—	—	82	161
Abdominal Tuberculosis, ...	5	—	7	4	3	3	6	2	3	4	3	—	—	40	64
Other Tuberculous Diseases, ...	—	1	2	6	5	6	7	9	8	5	6	2	—	57	120
Cancer (Malignant Disease), ...	—	1	—	1	2	—	3	17	59	151	208	188	108	738	1,430
Rheumatic Fever, ...	—	—	—	7	4	4	1	3	5	4	4	3	—	35	54
Diabetes, ...	—	—	—	—	1	1	2	3	7	7	19	19	6	65	103
Cerebral Hæmorrhage, etc., ...	—	—	—	—	—	—	—	3	13	51	104	200	178	549	944
Meningitis (not Tuberculous), ...	11	5	8	3	—	1	3	1	2	1	—	2	1	38	67
Other Nervous Diseases, ...	37	6	7	6	7	3	4	18	18	36	33	17	30	222	582
Heart Disease, ...	3	2	6	5	11	11	13	46	63	131	197	317	241	1,046	1,991
Arterio-sclerosis, ...	—	—	—	—	—	—	—	—	1	3	29	48	71	152	388
Other Circulatory Diseases, ...	1	1	—	—	—	—	1	1	2	5	11	10	5	37	89
Bronchitis, ...	33	10	6	—	1	1	2	6	6	25	38	87	77	292	635
Pneumonia (all forms), ...	223	147	79	16	4	8	11	28	41	37	57	76	42	769	1,801
Other Respiratory Diseases, ...	5	2	4	—	1	—	2	2	4	7	15	14	27	83	178
Ulcer of Stomach or Duodenum, ..	—	—	—	—	—	—	1	3	—	7	7	9	1	28	123
Diarrhœa, etc. (under 2 years).	113	19	—	—	—	—	—	—	—	—	—	—	—	132	334
Appendicitis, ...	—	1	2	4	1	3	1	5	5	6	4	1	—	33	76
Cirrhosis of Liver, ...	—	—	—	—	—	—	—	—	—	1	3	3	—	7	36
Acute and Chr. Nephritis, ...	2	—	—	3	1	3	—	17	26	53	55	51	21	232	442
Puerperal Sepsis, ...	—	—	—	—	—	5	14	38	32	—	—	—	—	89	89
Other Diseases and Accidents of Pregnancy and Parturition, ...	—	—	—	—	—	3	12	51	40	1	—	—	—	107	107
Congenital Debility and Malformation, Premature Birth,	358	—	1	—	—	—	—	—	—	—	—	—	—	359	873
Suicide, and other Deaths from Violence, ...	17	14	13	20	6	11	7	18	26	31	17	33	24	237	663
Other Defined Diseases, ...	71	9	22	20	13	16	17	42	65	93	117	176	327	988	1,849
Causes Ill-Defined or Unknown, ...	7	1	2	1	—	2	1	2	10	21	27	16	3	93	255
ALL CAUSES, ...	1,067	409	293	155	95	148	187	432	526	745	1011	1,314	1,185	7,567	15,701

TABLE X.—GLASGOW, 1928.—DEATHS OCCURRING IN INSTITUTIONS FOR THE TREATMENT OF THE SICK, NURSING HOMES, &c., WITHIN THE CITY.

DISEASE.	Poor Law Institutions.	General Hospitals and Infirmaries.	Local Authority Hospitals.	Nursing Homes, Asylums, &c.	TOTALS	°/° of all Deaths*	Outward Transfe Deaths.
1. Enteric Fever, ...	1	2	7	...	10	100	1
31A Typhus Fever, ...	...	...	...	...	...	...	...
2. Smallpox, ...	...	...	...	...	...	...	...
3. Measles, ...	19	...	215	...	234	62	4
4. Scarlet Fever, ...	...	...	32	...	32	94	6
5. Whooping-cough, ...	1	...	220	...	221	58	1
6. Diphtheria, ...	2	2	128	...	132	95	16
7. Influenza, ...	10	10	8	5	33	16	...
8. Encephalitis Lethargica, ...	22	1	1	...	24	73	7
9. Meningococcal Meningitis, ...	2	6	54	1	63	93	8
31B Erysipelas, ...	4	...	25	...	29	81	8
10. Tuberculosis of Respiratory System, ...	199	31	282	10	522	58	31
11A Tuberculous Meningitis, ...	24	29	62	1	116	74	14
11B Abdominal Tuberculosis, ...	6	8	12	3	29	48	11
11C Other Tuberculous Diseases,	16	27	26	2	71	63	17
12. Cancer (Malignant Disease),	257	303	6	54	620	44	230
13. Rheumatic Fever, ...	...	18	1	1	20	37	6
14. Diabetes, ...	14	33	2	3	52	51	17
15. Cerebral Hæmorrhage, etc.	231	63	1	33	328	36	40
31C Meningitis (not Tuberculous),	6	21	5	1	33	52	13
31D Other Nervous Diseases, ...	112	81	8	37	238	50	55
16. Heart Disease, ...	517	133	20	52	722	38	74
17. Arterio-sclerosis, ...	89	14	...	12	115	32	11
31E Other Circulatory Diseases,	20	25	4	2	51	59	13
18. Bronchitis, ...	127	21	7	14	169	27	22
19. Pneumonia (all forms), ...	267	136	568	23	994	56	81
20. Other Respiratory Diseases,	32	20	8	10	70	42	23
21. Ulcer of Stomach or Duodenum,	9	77	...	3	89	76	47
22. Diarrhœa, etc. (under 2 years),	79	56	24	...	159	48	10
23. Appendicitis, ...	4	62	1	5	72	96	61
24. Cirrhosis of Liver, ...	8	7	...	...	15	43	5
25. Acute and Chronic Nephritis,	85	90	2	11	188	44	55
26. Puerperal Sepsis, ...	8	17	57	...	82	92	16
27. Other Diseases and Accidents of Pregnancy and Parturition,	13	66	3	3	85	79	14
28. Congenital Debility and Malformation, Premature Birth,	96	198	12	13	319	37	64
29 and 30. Suicide, and other Deaths from Violence, ...	32	291	7	10	340	56	140
31. Other Defined Diseases, ...	237	468	68	81	854	47	374
32. Causes Ill-defined or Unknown,	3	10	1	27	41	17	7
YEAR, 1928, ...	2,552	2,326	1,877	417	7,172	47	1,502
YEAR, 1927, ...	2,479	2,209	1,886	328	6,902	46	1,455

* These percentages are based on the number of deaths occurring in and belonging to the City.

TABLE XI.—GLASGOW, 1928.—DEATHS OF PERSONS WITH INSTITUTIONAL OR HARBOUR ADDRESS ONLY.

DISEASE.	Poor Law Institutions.	General Hospitals and Infirmaries.	Local Authority Hospitals.	Model Lodging-houses, Hotels, Etc.	Homes for Old Men, Women & Orphans, &c., Asylums, Prisons & Harbour	Total.
1. Enteric Fever, ...	...	...	1	...	...	1
31A Typhus Fever, ...	...	...	...	...	...	...
2. Smallpox, ...	...	...	...	...	...	...
3. Measles, ...	1	...	1	...	...	2
4. Scarlet Fever, ...	...	...	1	...	...	1
5. Whooping-cough, ...	...	...	1	...	...	1
6. Diphtheria, ...	...	1	1	...	...	2
7. Influenza, ...	1	...	...	...	1	2
8. Encephalitis Lethargica, ...	1	...	...	...	...	1
9. Meningococcal Meningitis, ...	...	...	...	...	1	1
31B Erysipelas, ...	...	...	...	...	...	...
10. Tuberculosis of Respiratory System, ...	38	3	5	...	3	49
11A Tuberculous Meningitis, ...	...	...	...	...	...	...
11B Abdominal Tuberculosis, ...	...	...	...	...	...	...
11C Other Tuberculous Diseases, ...	2	...	1	...	...	3
12. Cancer (Malignant Disease), ...	48	9	...	1	9	67
13. Rheumatic Fever, ...	...	...	...	...	1	1
14. Diabetes, ...	...	...	...	...	...	...
15. Cerebral Hæmorrhage, etc., ...	29	6	...	1	21	57
31C Meningitis (not Tuberculous).	...	2	...	...	...	2
31D Other Nervous Diseases, ...	12	...	...	...	5	17
16. Heart Disease, ...	82	3	1	12	20	118
17. Arterio-sclerosis, ...	14	...	...	1	4	19
31E Other Circulatory Diseases, ...	3	...	1	...	...	4
18. Bronchitis, ...	29	...	...	...	5	34
19. Pneumonia (all forms), ...	50	4	12	1	6	73
20. Other Respiratory Diseases, ...	4	...	...	...	1	5
21. Ulcer of Stomach or Duodenum,	4	4	...	...	1	9
22. Diarrhœa, etc. (under 2 years),	2	1	...	...	...	3
23. Appendicitis, ...	...	...	...	...	...	...
24. Cirrhosis of Liver, ...	3	...	...	...	...	3
25. Acute and Chronic Nephritis,	10	...	...	1	6	17
26. Puerperal Sepsis, ...	...	...	...	...	...	...
27. Other Diseases and Accidents of Pregnancy and Parturition, ...	...	...	...	...	...	...
28. Congenital Debility and Malformation, Premature Birth,	24	4	3	...	10	41
29 and 30. } Suicide, and other Deaths from Violence, ...	3	21	...	4	14	42
31. Other Defined Diseases, ...	34	12	3	12	26	87
32. Causes Ill-Defined or Unknown.	...	1	...	26	2	29
ALL CAUSES, ...	394	71	31	59	136	691

TABLE XII.—GLASGOW.—DEATHS UNDER 1 YEAR, AND DEATH-RATES PER 1,000 BIRTHS IN EACH MUNICIPAL WARD, FOR THE YEAR 1928.

MUNICIPAL WARDS.	DEATHS – 1 YEAR.	Death-rate per 1,000 Births.		
	1928.	1928.	1927.	1926.
1. Shettleston and Tollcross,	86	99	126	108
2. Parkhead,	124	126	97	103
3. Dalmarnock,	135	115	130	118
4. Calton,	162	161	113	112
5. Mile-end,	113	157	140	163
6. Whitevale,	79	135	128	92
7. Dennistoun,	38	101	47	74
8. Provan,	102	108	101	143
9. Cowlairs,	46	95	113	71
10. Springburn,	41	94	101	74
11. Townhead,	65	117	109	99
12. Exchange,	60	140	135	120
13. Blythswood.	32	131	144	135
14. Anderston,	82	117	118	95
15. Sandyford,	40	102	116	89
16. Park,	14	63	74	68
17. Cowcaddens,	145	134	121	104
18. Woodside,	101	113	114	100
19. Ruchill,	68	90	121	79
20. North Kelvin.	31	74	69	68
21. Maryhill,	56	97	96	88
22. Kelvinside,	9	49	58	49
23. Partick East,	71	128	92	90
24. „ West,	42	79	89	99
25. Whiteinch,	38	47	56	63
26. Hutchesontown,	105	98	133	98
27. Gorbals,	138	114	112	128
28. Kingston,	71	84	124	118
29. Kinning Park,	80	91	108	84
30. Govan,	113	110	101	106
31. Fairfield,	60	92	82	86
32. Pollokshields,	17	48	12	71
33. Camphill,	11	52	75	82
34. Pollokshaws,	31	88	48	89
35. Govanhill,	45	76	78	59
36. Langside,	11	51	63	44
37. Cathcart,	8	37	48	52
Institutions, &c.,	55	...	...	...
CITY,	2,525	107	107	104

Cause of Death.	Age in Weeks.				Total −4 weeks.	Age in Months.											Total −1 year.
	−1	−2	−3	−4		−2	−3	−4	−5	−6	−7	−8	−9	−10	−11	−12	
I. Congenital Malformations, ...	23	5	8	5	41	9	6	6	3	3	...	...	...	...	...	...	68
II. Diseases of Early Infancy, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	476
(*a*) Congenital Debility, Sclerema, and Icterus, ...	56	17	11	9	93	19	10	8	4	5	1	2	...	...	1	...	143
(*b*) Premature Birth, ...	188	34	22	12	256	14	3	3	...	...	...	...	...	...	1	...	277
(*c*) Injury at Birth,...	13	6	2	1	22	...	...	...	...	...	...	...	1	...	...	...	23
(*d*) Atelectasis, ...	15	...	1	...	16	2	1	...	...	...	...	...	...	...	..	...	19
(*e*) Others, ...	9	3	...	1	13	1	...	...	...	...	...	...	...	...	...	...	14
III. Diseases of Respiratory System,	6	9	9	5	29	21	28	34	39	28	24	30	35	29	21	20	338
IV. Diseases of Digestive System, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	202
(*a*) Diarrhœal, ...	2	3	3	3	11	9	25	28	23	28	13	10	9	5	10	4	175
(*b*) Others, ...	1	...	1	1	3	1	4	2	3	2	2	4	1	3	1	1	27
V. Diseases of Nervous System, ...	15	4	2	4	25	4	9	11	5	3	6	4	3	4	6	3	83
VI. Tuberculous Diseases, ...	...	...	...	...	...	....	...	...	...	...	...	...	..	...	...	...	26
(*a*) Pulmonary Tuberculosis, ...	...	...	...	...	...	....	...	...	1	2	1	1	1	...	1	...	7
(*b*) Tuberculous Meningitis, ...	...	...	...	...	...	...	1	1	2	...	2	1	2	1	2	1	13
(*c*) Abdominal Tuberculosis, ...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	1	...	4
(*d*) Other Forms, ...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2
VII. Infectious Diseases, ...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	178
(*a*) Measles, ...	...	...	...	...	...	...	2	1	1	3	8	5	8	7	11	4	50
(*b*) Scarlet Fever, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(*c*) Whooping-cough, ...	...	...	1	2	3	3	3	5	5	7	10	14	8	8	10	10	86
(*d*) Diphtheria, ...	...	...	2	...	2	...	...	...	...	...	1	...	4	...	...	3	10
(*e*) Erysipelas, ...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	2
(*f*) Meningococcal Meningitis, ...	...	...	...	...	...	1	...	1	2	4	6	3	1	1	5	1	25
(*g*) Varicella, ...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2	...	4
(*h*) Enteric Fever, ...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
VIII. Syphilis, ...	...	1	...	1	2	3	2	...	...	...	1	...	...	1	1	...	10
IX. Overlaying, ...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	2
X. Other Violence, ...	1	...	...	1	2	...	...	...	...	1	1	1	...	1	...	...	6
XI. All Other Causes, ...	6	4	7	2	19	6	4	4	6	7	9	1	3	5	1	4	69
	335	86	69	47	537	95	100	105	96	93	87	77	76	66	74	52	1,458

TABLE XIV.—Glasgow, 1928.—FEMALE Infant Deaths at Given Ages and from Several Causes.

Cause of Death.	Age in Weeks.				Total – 4 weeks.	Age in Months.											Total – 1 year.
	– 1	– 2	– 3	– 4		– 2	– 3	– 4	– 5	– 6	– 7	– 8	– 9	– 10	– 11	– 12	
I. Congenital Malformations, ...	22	7	2	4	35	4	4	2	1	1	1	1	...	...	...	1	**50**
II. Diseases of Early Infancy. ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	**330**
(*a*) Congenital Debility, Sclerema, and Icterus, ...	43	13	12	3	71	8	11	4	2	3	1	2	1	...	2	...	105
(*b*) Premature Birth, ...	121	26	17	11	175	15	2	2	...	1	...	...	...	..	...	...	195
(*c*) Injury at Birth, ...	6	...	...	...	6	1	...	...	...	...	...	...	...	...	...	1	8
(*d*) Atelectasis, ...	12	1	1	...	14	...	...	...	...	...	...	...	...	...	...	...	14
(*e*) Others, ...	6	2	...	...	8	...	...	...	...	...	...	...	...	...	...	...	8
III. Diseases of Respiratory System,	3	10	12	6	31	13	16	23	28	20	27	24	13	23	19	24	**261**
IV. Diseases of Digestive System,...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	**127**
(*a*) Diarrhœal, ...	2	2	3	3	10	9	8	20	12	12	7	14	7	3	6	5	113
(*b*) Others, ...	1	...	...	1	2	3	2	...	2	...	2	1	1	...	1	...	14
V. Diseases of Nervous System, ..	2	3	1	2	8	6	2	8	3	7	3	3	3	3	2	...	**48**
VI. Tuberculous Diseases.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	**18**
(*a*) Pulmonary Tuberculosis, ...	...	...	...	...	...	...	..	...	...	...	1	...	...	1	1	...	3
(*b*) Tuberculous Meningitis, ...	...	...	...	...	...	...	...	2	...	1	1	2	...	3	1	...	10
(*c*) Abdominal Tuberculosis, ...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	1	2	5
(*d*) Other Forms, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VII. Infectious Diseases.	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	**165**
(*a*) Measles, ...	...	...	...	...	...	1	...	3	...	4	5	12	8	8	15	12	68
(*b*) Scarlet Fever, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(*c*) Whooping-cough, ...	...	...	1	...	1	3	3	4	1	7	4	9	10	11	10	10	73
(*d*) Diphtheria, ...	...	...	...	...	...	1	...	...	...	...	...	1	2	1	...	5	10
(*e*) Erysipelas, ...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
(*f*) Meningococcal Meningitis, ...	...	...	...	...	...	...	...	...	...	5	2	1	1	1	3	...	13
(*g*) Varicella, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1
(*h*) Enteric Fever, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VIII. Syphilis, ...	...	...	...	...	...	3	3	1	3	1	...	...	...	...	...	...	**11**
IX. Overlaying, ...	1	1	1	...	3	2	1	1	3	...	...	...	...	1	...	...	**11**
X. Other Violence, ...	1	...	...	...	1	...	...	...	2	1	...	...	...	2	...	...	**6**
XI. All Other Causes, ...	5	2	2	2	11	5	2	8	...	1	4	2	1	3	1	2	**40**
	225	67	52	32	376	75	54	79	57	64	58	72	47	60	63	62	**1,067**

TABLE XV.—Glasgow, 1926-1928.—Abstract of Notifications under Notification of Births Act, 1907, and Results of Visits.

	1926*	1927	1928
Total Number of Notifications, ...	25,785	24,882	24,720
Doctor at Home, ...	7,255	7,140	6,858
Doctor in Institution, ...	3,799	3,636	3,945
Maternity Hospital (Outdoor) Nurse, ...	3,600	3,486	3,670
Other Institutional Nurse, ...	—	—	—
Certified Midwife, ...	11,105	10,601	10,227
Others, ...	26	19	20
Total Cards issued, ...	18,530	17,742	17,862
Total Cards returned, ...	18,956	17,683	17,919
Full Information, ...	17,938	16,757	16,969
Doctor found in attendance, ...	41	32	33
Wrong Address—Not Traced, ...	—	—	—
Others, ...	977	894	917

TABLE XVI.—Glasgow, 1926-1928.—BIRTHS Notified showing Medically and not Medically Attended.

	1926*	1927	1928
Notifications Received—*less Duplicates*—			
Total, ...	25,785	24,882	24,720
Live-births, ...	24,825	23,866	23,678
Still-births, ...	960	1,016	1,042
Per cent. Still-births to Total, ...	3·7	4·1	4·2
Medically attended—			
Total Births at Home, ...	7,255	7,140	6,858
In Institutions, ...	3,799	3,636	3,945
Total, ...	11,054	10,776	10,803
Per cent., ...	42·9	43·3	43·7
Still-births at Home, ...	256	265	241
Still-births in Institutions, ...	322	380	405
Not Medically attended—			
Maternity Hospital, Outdoor Nurse, ...	3,600	3,486	3,670
Other Institutional Nurses, ...	—	—	—
Certified Midwives, ...	11,105	10,601	10,227
Others, ...	26	19	20
Total, ...	14,731	14,106	13,917
Per cent., ...	57·1	56·7	56·3
Still-births, ...	382	371	396

* Figures for 1926 include Added Area.

TABLE XVII.—GLASGOW, 1926-1928.—CASES OF INFECTIOUS DISEASE REGISTERED AND NUMBERS OF THESE TREATED IN LOCAL AUTHORITY HOSPITALS, &C.

	1926		1927		1928†			
	Hosp.	Home.	Hosp.	Home.	L. A. Hosp.	Other Institutions.	Home.	Total.
A.—Notifiable—								
Fevers—Typhus, ...	8	...	...	...	...	...	...	...
Enteric, ...	96	4	130	18	46	4	8	58
Continued and Undefined,	3	2	5	...	3	...	1	4
Puerperal, ...	302	7	254	23	284	89	40	413
Smallpox, ...	...	...	...	...	...	...	...	...
Scarlet Fever, ...	4.554	189	3,803	314	3,010	...	227	3,237
Diphtheria and Membranous Croup, ...	2,255	68	2,908	128	2,509	30	91	2,630
Erysipelas, ...	522	503	426	422	474	19	429	922
Cholera, ...	...	...	...	...	...	...	...	...
Cerebro-Spinal Fever, ...	60	6	75	4	82	16	4	102
Ophthalmia Neonatorum, ...	63	600	42	610	57	...	635	692
Trachoma, ...	11	32	7	42	10	1	19	30
Acute Encephalitis Lethargica,	22	23	12	11	5	7	22	34
Acute Polio-Encephalitis, ...	2	1	...	...	...	1	1	2
Acute Poliomyelitis, ...	2	8	5	8	40	15	64	119
Acute Primary Pneumonia, ...	3,428	2,743	3,451	2.426	3,264	557	1,847	5,668
Acute Influenzal-Pneumonia, ...	260	273	197	178	197	19	188	404
Malaria, ...	7	15	6	13	2	1	21	24
Dysentery, ...	7	5	17	12	32	5	8	45
Infective Jaundice, ...	1	...	...	...	...	...	...	...
Pulmonary Tuberculosis, ...	840	955	860	763	873	...	851	1,724
Other Forms of Tuberculosis, ...	317	714	388	713	319	...	788	1,107
B.—Not Notifiable—								
Measles, ...	1,064	15,057	799	8,184	974	16	9,108	10,098
German Measles, ...	67	401	47	126	66	...	197	263
Whooping-cough, ...	273	3.565	580	9.413	831	12	7,280	8,123
Chickenpox,*	155	5,631	176	7,688	239	18	5,305	5,562
Others, ...	4[a]	...	5[b]	...	13[c]	...	...	13
Totals, ...	14,323	30,802	14,193	31,096	13,330	810	27,134	41,274
Notified, but diagnosis altered to Non-Infectious Diseases, ...					1,173	3	16	1,192
Total Registered, ...					14,503	813	27,150	42,466

(a) Anthrax, 1; Enteritis, 2; Mumps, 1; (b) Mumps, 3: Enteritis, 1; Vincent's Angina, 1; (c) Mumps, 13.

* Made compulsorily notifiable in March, 1927.

† Where patients suffer from two or more diseases, each disease is reckoned as a case.

TABLE XVIII.—GLASGOW, 1924-1928.—CASE-RATES *per Million* FOR INFECTIOUS DISEASES.

	CASE-RATES PER MILLION.				
	1924	1925	1926*	1927	1928
A.—Notifiable—					
Fevers—Typhus, ...	...	...	7	...	..
Enteric, ...	75	40	91	131	51
Continued and Undefined, ...	17	8	4	4	3
Puerperal, ...	216	273	279	245	360
Smallpox, ...	2	...	...	...	...
Scarlet Fever, ...	2,905	3,472	4,252	3,641	2.822
Diphtheria and Membranous Croup, ..	1,733	1,581	2,082	2.685	2,293
Erysipelas, ...	783	913	922	750	804
Cholera, ...	...	...	...	...	...
Cerebro-Spinal Fever, ...	60	56	60	70	89
Ophthalmia Neonatorum, ...	540	560	601	577	603
Trachoma, ...	41	37	39	43	26
Acute Encephalitis Lethargica, ...	357	66	39	20	30
Acute Polio-Encephalitis, ...	3	2	3	...	2
Acute Poliomyelitis, ...	8	7	9	11	104
Acute Primary Pneumonia, ...	6,155	5,285	5,589	5,198	4,941
Acute Influenzal-Pneumonia, ...	480	276	483	332	352
Malaria, ...	23	17	20	17	21
Dysentery, ...	13	11	11	26	39
Infective Jaundice, ...	...	...	1	...	...
Pulmonary Tuberculosis, ...	1,669	1,457	1,572	1,435	1.503
Other Forms of Tuberculosis, ...	1,114	1,016	907	974	965
B.—Not Notifiable—					
Measles, ...	7,588	5,927	14,630	7.945	8,803
German Measles.	463	228	423	153	229
Whooping-cough, ...	9,168	11,109	3,466	8,839	7,081
Chickenpox, ...	4,632	6,519	5,191	6,955	4,849
Others, ...	5	2	4	4	11
Totals, ...	38,050	38,862	40,684	40,055	35,981

* Added Area not included

TABLE XIX.

Cases of Infectious Disease Registered in each Month—Showing Numbe

	INFECTIOUS DISEASE (NOTIFICATION) ACT, 1889																							
	Fevers								5		6		7		8		9		10		11		12	1
	1 Typhus		2 Enteric, including Paratyphoid		3 Continued and Undefined		4 Puerperal		Scarlet Fever		Diphtheria and Membranous Croup		Erysipelas		Cerebro-Spinal Fever		Ophthalmia Neonatorum		Trachoma		Acute Encephalitis Lethargica		Acute Polio-Encephalitis	Acute Polio-
	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Others	Hosp.
Jan.	...	...	3	1	...	1	21	5	287	25	337	16	48	45	8	2	7	67	...	...	...	2	...	..
Feb.	...	...	6	2	...	...	26	16	261	26	239	29	36	43	8	2	6	40	...	1	...	3	...	...
Mar.	...	...	4	...	...	...	29	11	240	23	271	12	36	49	15	2	4	58	1	1	...		...	1
April	...	...	4	1	1	...	26	18	204	17	160	7	35	29	9	3	4	52	3	...	...	2	...	...
May	...	...	4	...	...	...	29	18	222	25	160	8	41	35	7	3	6	66	1	4	...	2	1	...
June	...	...	1	...	1	...	20	12	179	14	167	6	36	23	4	..	...	54	...	1	...	5	...	1
July	...	...	5	1	...	...	21	9	183	4	110	5	23	19	5	3	8	53	...	...	1	1	1	[illegible]
Aug.	...	...	4	2	...	...	25	5	172	9	148	6	31	24	9	1	3	61	...	3	1	1	...	[illegible]
Sept.	...	...	5	2	...	...	18	5	250	16	205	6	31	43	3	2	4	43	...	1	1	3	...	[illegible]
Oct.	...	...	4	...	...	...	23	12	363	23	233	10	49	51	4	1	7	49	1	1	1	7	...	[illegible]
Nov.	...	...	1	...	...	...	19	11	349	22	266	9	55	45	5	1	8	47	...	4	...	2	...	[illegible]
Dec.	...	...	5	3	1	...	27	7	300	23	213	7	53	42	5	...	...	45	4	4	1	1	...	[illegible]
	...	...	46	12	3	1	284	129	3010	227	2509	121	474	448	82	20	57	635	10	20	5	29	2	[illegible]

ASGOW.

ATED IN HOSPITALS OF THE LOCAL AUTHORITY DURING 1928

NFECTIOUS DISEASES REGULATIONS, 1919								TUBERCULOSIS REGULATIONS, 1914				OTHER INFECTIOUS DISEASES									
14		15		16		17		18		19		0				22		23			
Acute Primary Pneumonia		Acute Influenzal-Pneumonia		Malaria		Dysentery		Pulmonary Tuberculosis		Other Forms of Tuberculosis		Measles		German Measles		Whooping-cough		Chicken-pox		TOTALS	
	Others	Hosp.	Others	Hosp.	Others	Hosp	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others	Hosp.	Others
9	390	15	27	...	2	...	...	75	68	29	67	351	3720	...	14	45	934	21	695	1516	608
4	268	11	18	1	...	...	2	95	84	37	127	271	2501	5	10	76	868	17	489	1329	4529
8	299	15	30	...	4	4	...	84	73	34	95	155	1501	1	17	111	1065	25	436	1358	3676
8	158	14	16	...	1	...	...	71	55	26	77	98	543	1	14	124	1138	25	259	1063	2391
8	166	13	11	...	5	2	...	85	97	44	91	46	303	4	17	113	1012	30	400	1055	2264
3	135	19	12	...	3	1	...	74	74	26	59	15	164	2	19	76	563	25	505	870	1650
4	65	9	2	...	...	3	...	68	47	24	46	16	22	3	...	60	132	17	175	723	587
8	82	10	6	...	2	6	6	71	70	24	47	4	16	1	7	62	649	8	216	755	1218
4	82	7	3	...	1	1	1	59	51	24	40	3	42	3	5	46	276	11	268	871	901
8	167	23	26	...	1	4	2	77	72	18	45	1	76	2	16	31	234	17	564	1193	1405
7	366	29	28	...	2	2	1	61	60	17	47	7	135	13	44	35	257	26	725	1354	1810
3	226	32	28	1	1	9	1	53	100	16	47	7	101	31	34	52	164	17	591	1230	1428
4	2404	197	207	2	22	32	13	873	851	319	788	974	9124	66	197	831	7292	239	5323	13317	27944
								Add—Others, ...	...	...	...	...	...	...	...	...	...	...	...	13	..
										Altered Diagnoses, ...		...		...		...		...	...	1173	19
																				14503	27963

TABLE XX.—HOSPITAL BED ACCOMMODATION FOR INFECTIOUS DISEASES IN GLASGOW SINCE 1865 (EXCLUDING TUBERCULOSIS).

YEAR.	PARISH.			Glasgow Royal Infirmary.	LOCAL AUTHORITY.						Total Beds.	Population in Thousands.	Beds per Thousand.
	City.	Barony.	Govan.		Parliamentary Road.	Belvidere Fever.	Belvidere Smallpox.	Ruchill.	Shieldhall.	Knightswood.			
1865	100	120	54	200	136	...	...	...	...	...	610	428	1·4
1866	100	120	54	175	136	...	...	...	...	...	585	438	1·3
1867	...	120	54	100	136	...	...	...	...	...	410	446	0·9
1869	...	120	54	135	136	...	...	...	...	...	445	464	1·
1870	...	120	54	100	250	250	...	...	...	...	774	471	1·
1872	...	120	...	100	250	250	...	...	...	...	720	495	1·
1875	...	...	...	100	250	250	...	...	...	...	600	500	1·
1876	...	...	...	...	250	250	...	...	...	...	500	502	1·
1878	...	...	...	...	120	250	150	...	...	...	520	507	1·
1880	...	...	...	...	120	250	150	...	...	...	520	510	1·
1881	...	...	...	...	120	370	150	...	...	...	640	512	1·
1882	...	...	...	...	120	220	150	...	...	...	490	518	1·
1887	...	...	...	...	120	390	150	...	...	...	660	545	1·
1893	...	...	...	...	200	390	150	...	...	...	740	678	1·
1900	...	...	...	...	200	390	150	440	...	...	1180	744	1·
1901	...	...	...	...	200	390	220	440	...	...	1250	764	1·
1906	...	...	...	...	...	390	220	440	...	...	1050	836	1·
1910	...	...	...	...	...	390	220	542	...	...	1152	884	1·
1913	...	...	...	...	...	390	220	542	100	81	1333	1032	1·
1915	...	...	...	...	...	390	220	542	100	10	1262	1035	1·
1923	...	...	...	...	...	610	...	542	100	114	1366	1089	1·
1925	...	...	...	...	...	610	...	542	100	134	1386	1096	1·
1926	...	...	...	...	...	610	...	542	120	134	1406	1098	1·

The City has also a part interest in Lightburn Hospital—about 7-8 beds.
,, ,, ,, Darnley ,, ,, 20 ,,
,, , ,, Blawarthill ,, .

TABLE XX.—(*Continued*).

INSTITUTION ACCOMMODATION FOR FEVER AND TUBERCULOSIS PATIENTS:—

	Fever.	Tuberculosis.	Total.
Belvidere Hospital, ...	610	—	610
Ruchill Hospital, ...	542	272	814
Shieldhall Hospital, ...	120	—	120
Knightswood Hospital, ...	134	88	222
Bellefield Sanatorium, ...	—	45	45
Robroyston Sanatorium, ...	—	548	548
Baird Street Hospital, ...	—	20	20
TOTAL BEDS IN CORPORATION INSTITUTIONS, ...	1,406	973	2,379
Ochil Hills Sanatorium, ...	—	50	50
Bridge of Weir Sanatorium, .	—	70	70
Dunblane Sanatorium, ...	—	12	12
Seaforth Sanatorium, ...	—	14	14
Hairmyres Sanatorium, ...	—	7	7
Lanfine Home, ...	—	25	25
Strathblane Hospital, ...	—	10	10
Poor Law Institutions, ...	—	218	218
BEDS IN OTHER INSTITUTIONS,	—	406	406*
TOTAL, ...	1,406	1,379	2,785

* Average daily number occupied during 1928.

TABLE

SHOWING NUMBER, AVERAGE RESIDENCE, AND

Ordinary Nett Expenditure (as per Treasurer's Statement), excluding Interest and Sinking Fund Charges :—

Infectious Diseases Hospital, Belvidere, ...	£67,019 15 0	
Infectious Diseases Hospital, Ruchill, ...	92,248 17 2	
Infectious Diseases Hospital, Shieldhall, ...	13,945 2 9	
Infectious Diseases Hospital, Knightswood,	24,511 17 8	
Sanatorium and Auxiliary Hospital, Robroyston, ...	57,225 19 4	
Bellefield Sanatorium, ...	7,795 9 1	
		£262,747 1 0

Average Residence of Patients dismissed, 1927-1928, ...	...50·30 days.
Average Daily Expenditure, ...	£717 17 7
Average Daily Cost per Patient, ...	0 6 2
Average Cost of Treatment per Patient, ...	15 11 8
Average Cost of Bed per Year, ...	113 7 11

NUMBER OF PATIENTS TREATED IN HOSPITALS AND SANATORIA AND AVERAGE DAILY COST PER PATIENT.

	Remaining, 31/5/27.	Admitted 1927/28.	Total under Treatment.	Dismissed, 1927/28.	Remaining 31/5/28.	Average Daily Number.	Average Daily Cost per Patient.
Belvidere Hospital,	561	6,035	6,596	6,080	516	565	6/6d.
Ruchill Hospital,	793	6,306	7,099	6,381	718	829	6/10d.
Shieldhall Hospital,	101	1,232	1,333	1,255	78	108	7/0d.
Knightswood Hospital,	233	1,942	2,175	1,947	228	221	6/1d.
Robroyston Sanatorium and Auxiliary Hospital,...	527	558	1,085	539	546	542	5/9d.
Bellefield Sanatorium, ...	58	106	164	114	50	52	8/2d.
Total, ...	2,273	16,179	18,452	16,316	2,136	2,317	6/2d.*
Darnley Joint Hospital, ...	22	154	176	155	21	24	...
Lightburn Joint Hospital, ...	16	150	166	155	11	14	...
Blawarthill Joint Hospital, ...	10	45	55	51	4	6	...
Grand Total,...	2,321	16,528	18,849	16,677	2,172	2,361	..

* Interest and Sinking Fund averages 1/8d. per patient day.

XI.

ST OF TREATMENT OF PATIENTS, 1927-1928.

TIENTS DISMISSED FROM CORPORATION INSTITUTIONS, CLASSIFIED AS TO DISEASE, AVERAGE RESIDENCE OF PATIENTS DISMISSED, AND AVERAGE COST AT THE DAILY RATE GIVEN ABOVE.

Disease.	Number Dismissed.	Average Residence.		Average Cost.		
yphus Fever, ...	—	—	days	£	—	
nallpox, ...	—	—	,,		—	
nteric Fever, ...	119	47·87	,,	14	16	6
nthrax, ...	—	—			—	
uerperal Fever, ...	283	32·80	,,	10	3	2
carlet Fever, ...	3,390	44·06	,,	13	12	10
iphtheria, ...	2,898	42·42	,,	13	2	8
ncephalitis Lethargica, ...	12	59·25	,,	18	6	11
oliomyelitis, ...	—	—	,,		—	
rachoma, ...	27	44·96	,,	13	18	5
cute Primary Pneumonia and Influenzal-Pneumonia, ...	3,316	27·62	,,	8	11	1
ropical Diseases, ...	21	30·38	,,	9	8	2
easles and German Measles, ...	1,896	24·32	,,	7	10	7
hooping-Cough, ...	803	42·06	,,	13	0	6
hthisis, ...	1,124	135·46	,,	41	18	11
on-Pulmonary Tuberculosis, ...	369	411·70	,,	127	9	11
ther Infectious Diseases, ...	736	29·32	,,	9	1	7
ll other Diseases, ...	1,322	25·43	,,	7	17	6
	16,316					

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* Includes Erysipelas, Cerebro-spinal Fever, Chickenpox, and Influenza.

† Includes Nursing Mothers, also Persons sent in by mistaken diagnosis.

TABLE XXII.—GLASGOW.—STATUTORY DECLARATIONS OF CONSCIENTIOUS OBJECTION TO VACCINATION IN EACH WARD DURING 1928.

MUNICIPAL WARDS.	Conscientious Objections Lodged.	Percentage of Births Registered.		
		1928.	1927.	1926.
1. Shettleston and Tollcross,	170	20	22	20
2. Parkhead,	239	24	21	19
3. Dalmarnock,	247	21	20	19
4. Calton,	183	18	21	17
5. Mile-end,	152	21	22	17
6. Whitevale,	129	22	23	19
7. Dennistoun,	56	15	15	17
8. Provan,	196	21	18	21
9. Cowlairs,	149	31	32	34
10. Springburn,	164	37	29	40
11. Townhead,	143	26	24	23
12. Exchange,	77	18	19	19
13. Blythswood,	43	18	15	18
14. Anderston,	139	20	14	17
15. Sandyford,	59	15	16	17
16. Park,	42	19	16	16
17. Cowcaddens,	212	20	18	16
18. Woodside,	129	14	16	13
19. Ruchill,	186	25	24	25
20. North Kelvin,	81	19	17	23
21. Maryhill,	101	18	19	15
22. Kelvinside,	11	6	10	7
23. Partick (East),	111	20	17	18
24. ,, (West),	121	23	18	27
25. Whiteinch,	235	29	26	25
26. Hutchesontown,	311	29	26	29
27. Gorbals,	282	23	20	19
28. Kingston,	251	30	27	25
29. Kinning Park,	231	26	25	26
30. Govan,	386	38	41	39
31. Fairfield,	271	41	40	49
32. Pollokshields,	65	19	15	16
33. Camphill,	21	10	13	17
34. Pollokshaws,	118	33	37	42
35. Govanhill,	177	30	22	28
36. Langside,	23	11	12	18
37. Cathcart,	44	21	18	20
Institutions, &c.,	5	—	—	—
	5,560	24	22	23

TABLE XXIII.—General Sanitary Operations.—(*a*) Food and Drugs, &c.

Year.	1928.	1927.	1926.
I. Dairies.			
Registered during year,	246	201	174
Removed from Register,	215	169	101
On Register at 31st Dec.,	1,659	1,628	1,596
Number of Inspections,	22,571	22,901	22,058
Contraventions of Orders or Regulations,	23	19	28
Prosecutions for same,	11	13	3
Repairs or Improvements effected,	17	13	19
II. Dealers in Ice Cream.			
Registered during the year	59	83	59
Removed from Register,	55	85	151
On Register at 31st Dec.,	602	598	600
Number of Inspections,	9,397	9,453	9,132
Contraventions of Orders or Regulations,	8	12	32
Prosecutions for same,	...	2	3
Repairs or Improvements effected,	8	6	10
III. Byres for Milch Cows.			
Number of Dairy Byres as at 31st Dec.,	52	54	65
,, Cows licensed for,	1,199	1,197	1,400
Average number kept,	957	951	1,056
Number of Inspections,	529	605	580
IV. Unwholesome Food.			
Number of Inspections,	13,148	13,329	12,283
,, Lots dealt with,	38	38	35
Nature of Food destroyed at Inspector's instance with Owner's consent—			
Eggs,	22	74	216
Canned Food (various), ... (lbs.)	1,610	2,059	3,400
Fruit (Dried and Soft), ... ,,	34,188	7,335	89,706
Pork (Fresh and Cured), ... ,,	424	49	14
Vegetables, ... ,,	54,460	37,542	170,706
Confections, ... ,,	168	...	...
Sausages, ... ,,	...	30	...
Fish (Cured), ... ,,	...	...	6
Lard, ... ,,	...	62	...
Poultry, ... ,,	90	...	...
Prosecutions,	...	...	...

TABLE XXIII. (*Continued*).

Year.	1928.	1927.	1926.
V. Food and Drugs and Margarine Acts.			
Informal Samples analysed,	3,902	4,132	3,586
Statutory Samples analysed,	1,333	1,411	1,445
Statutory Samples found Non-genuine,	106	58	56
Proceedings instituted,	50	36	31
Number of Convictions,	49	33	28
Amount of Fines imposed,	£204 12/	£146 3/	£157 10/
Number dismissed or found "not proven,"	1	2	1
Number deserted simpliciter,	...	1	2
Prosecutions for Margarine Offences,	5	2	2
Fines and Expenses imposed,	£13	£5	£5
Non-convictions,	...	...	...
Obstruction,	...	...	...
Fines imposed,	...	...	...
Vending Milk without name and address being on vessel,	...	...	1
Number of Convictions,	...	...	1
Amount of Fines,	...	...	10/6
Refusal to Sell,	...	...	...
Number of Convictions,	...	...	...
Amount of Fines,	...	...	...
VI. The Sale of Horse-Flesh Regulation Act, 1889.			
Number of premises in which Horse-flesh is sold,	...	...	...
Prosecutions for contravention of Act,	..	...	...
Fines imposed,	...	...	...
VII. Fish and Game Inspection.			
Under the Glasgow Police Amendment Act, 1890.			
Number of Packages of Fish, Game, Poultry, and Rabbits passed through Fish Market,	1,764,075	1,729,159	1,712,119
Number of Inspections of Fish Shops, Restaurants, and Hawkers' Barrows and Carts,	1,486	1,429	1,532
Number of Nuisances discovered therein,	...	...	...
Fish and Game destroyed with consent—			
Fresh Fish, (lbs.)	98,842	112,592	183,717
Cured Fish, ,,	15,751	10,362	25,847
Shell Fish, ,,	362	624	772
Crabs and Lobsters, ,,	653	133	251
Venison, ,,	1,259	190	560
Rabbits, ,,	1,465	7,578	4,320
Poultry and Game, ,,	4,897	1,176	853
Eggs, ,,	152	444	360

TABLE XXIII—(*Continued.*)

(*b*) AIR PURIFICATION.

Year.	1928.	1927.	1926.
Smoke Prevention.			
Glasgow Police (Further Powers) Act, 1892, Sec. 31.			
umber of Inspections of Boiler and other Furnaces, ...	1,453	1,483	1,303
" Observations of Chimneys, ...	28,491	27,714	27,752
" Intimations of Excess Smoke given, ...	344	366	281
" Warning Notices to those contravening the Act, ...	26	38	23
" Prosecutions in Police Courts, ...	57	42	8
" Convictions, ...	53	41	8
mount of Fines imposed, ...	£61 0/6	£62 14/	£15
umber of Prosecutions withheld on receiving a promise from Offenders to improve the Furnace Plant, ...	5	7	4
" Prosecutions withheld on account of accidents to Furnace Plant, or, regular Fireman temporarily off duty, ...	1	1	2
" New Steam Boilers installed to give increased power, ...	13	8	3
" Mechanical Stokers fitted to Steam Boiler Furnaces, ...	7	6	18
" Steam Boiler Furnaces fitted with Smoke-preventing Appliances, ...	4	3	...
" Furnaces in which Anthracite, Coke, or other non-bituminous Fuel has been substituted for ordinary Coal, ...	11	17	18
" Furnaces adapted for Smokeless Combustion of Oil Fuel, ...	3	3	2
" Steam Boilers replaced by Electric Motors (using Corporation power), ...	13	5	3
" Furnaces formerly Coal-fired, reconstructed for use of Corporation gas, ...	9	18	6
" New Chimneys erected or existing Chimneys heightened to give increased draught and carry gases higher, ...	8	7	1
" Improvements to Furnaces not coming under any of the above headings, ...	8	7	...
Spraying Dungsteads, Ashpits and Privies.			
otal number of Dungsteads Sprayed from 7th May, till 29th September, ...	18,180	19,444	19,811
otal Outlay for Wages, Plant, and Material, ...	£441	£512	£513
Interments.			
For year ending 31st May.	1928.	1927.	1926.
otal number of Applications granted for Interment of Unclaimed and other Bodies, ...	359	360	447
otal Expenditure, ...	£843 1/-	£793 0/6	£1,027 4/4
ayment of Costs recovered, ...	283 12/11	248 6/1	£326 6/2

TABLE XXIII.—(*c*) Summary of Operations of Sanitary

District.	EASTERN.						
Ward.	1	2	3	4	5	6	7
1 (*a*) Nuisances.							
Inspections made—							
Nuisances,	28662	25985	29384	44516	32272	17784	12570
Underground Dwellings,	...	...	...	...	...	...	...
Water Storage Cisterns,	583	122	16	...	1	...	...
Limewashings,	449	947	1221	1475	1414	90	796
Stair Cleaning,	3542	3892	3464	4579	1762	277	1138
Drain Testing,	2124	1097	2131	1914	1311	1487	1044
Total,	35360	32043	36216	52484	36760	19638	15548
Nuisances removed or remedied,	1630	1658	2595	3770	2195	866	611
Consisting of—							
Apartments, Lobbies, or W.C.'s, with insufficient light or ventilation, or otherwise defective in construction,	...	...	...	...	...	...	..
Defective Chimneys causing nuisance,	8	4	31	46	9	8	9
Disrepair or dampness in Dwelling-houses,	111	138	343	771	221	59	39
Offensive smells from Drains, or other reasonable grounds—smoke test,	43	21	74	55	36	51	29
Drains, Conductors, Soil-pipes, or Rhones choked or defective,	726	691	1075	1224	899	433	301
Sanitary Fittings choked or defective,	185	126	260	361	269	91	2
Dirty Houses and Bedding,	41	68	56	200	156	21	7
Dirty Closes, Stairs, etc. (daily and biweekly cleansing),	24	208	144	172	165	3	15
Houses overcrowded,	...	..	..	...	...	...	..
Walls of Closes, Staircases, Lobbies, W.C.'s, and external walls of Houses, filthy (limewashing),	158	217	224	268	221	138	130
Animals or Poultry kept so as to be a nuisance,	...	...	...	...	2	...	1
Accumulations of Garbage or Rubbish,	4	9	58	268	17	18	2
Smells from Decaying Animal Matter or other cause,	7	...	1	3	1	2	...
Stagnant Water,	...	...	1	1	2	...	...
Premises infested with Rats or other vermin,	1	...	2	12	..	3	...
Sink accommodation and Water Supply required,	...	...	...	2	...		..
Water-Closet accommodation required,	...	1	...	...	...	1	...
Water Storage Cisterns dirty, uncovered, or unventilated,	153	39	13	...	1	..	..
Water Supply Pipes defective—tenants without water,	24	18	60	44	43	10	6
Pit Shaft without adequate protection,	...	...	...	...	...	...	..
Reports to Gas Manager,	..	...	...	...	...	...	
,, Master of Works,	37	42	155	183	66	9	25
,, Superintendent of Cleansing,	...	...	1	5	3	1	..
,, Water Engineer,	108	76	97	155	84	18	22
Prosecutions—Sheriff Court,	...	...	...	...	...	...	..
,, —Police Court,	...	2	..	...	...	1	
Number Successful,	...	2	...	...	. .	1	..
Amount of Fines,	...	30/6	...	...	...	...	..
Number of Rotation Cards for Cleansing of Common Stairs, Lobbies, and W.C.'s served on Tenants,	69	237	263	314	321	31	138
1(*b*). Drain Testing.							
Total number of Applications of the test, first and subsequent,	356	107	161	128	94	110	97
Number of Applications for satisfaction of Dean of Guild Court,	257	40	7	12	11	8	17
Number of first Appplications to old Tenements or Systems,	51	31	83	62	41	52	44
Number of these found smoke tight,	9	9	10	9	9	1	14
Number of these found more or less defective,	42	22	73	53	32	51	30

SECTION FOR THE YEAR 1928—*Continued.* *ued.*

NORTHERN.									STERN.			CITY	1927.
8	9	10	11	17	18	19	20	21		31	32	1928.	
20118	12439	11970	13800	25907	26330	16346	4758	11013	9	14348	16891	789362	803626
...	...	...	...	...	1	...	...	...	.	...	...	349	131
...	595	61	...	8	...	...	..	...	7	3	144	1930	543
190	791	478	129	728	417	350	29	40	1	1679	1260	24739	27529
5	706	534	186	364	2086	3279	87	170	3	2014	999	66370	73690
2400	528	1396	1148	1606	1534	2710	538	701	7	323	1449	53105	52226
22713	15059	14442	15263	28613	30368	22685	5412	11924	7	18367	20743	935855	957745
1576	1098	1340	1593	2193	2196	1331	528	742	1	1939	972	61052	63963
...	...	...	..	...	...	...	...	...	1	1	...	84	73
9	9	13	10	28	27	15	5	8	9	17	3	651	780
57	60	151	80	107	189	68	42	27	9	311	90	6462	6271
44	13	24	40	53	50	45	19	23	5	9	9	999	887
709	395	549	576	868	844	453	253	358	1	718	431	23113	23697
140	66	133	145	245	196	101	39	59	1	252	110	6215	6968
158	18	75	75	180	162	71	31	71	8	7	1	2487	3127
7	43	33	90	76	201	292	33	47	8	128	14	3650	3562
..	...	...	...	...	1	1	...		1	...	1	4	14
198	129	158	220	323	227	191	3	89	1	161	104	7261	7223
.	...	...	...	...	2	...	...	1	16	1	4	40	22
8	...	32	99	42	33	14	13	8	7	23	15	1817	2453
2	1	5	2	3	13	1	4	...	5	7	4	111	169
...	...	...	7	...	2	...	...	...	7	4	2	66	760
3	...	1	1	5	7	3	1	1	8	...	2	111	167
...	...	...	...	...	...	...	...	...	..	1	...	15	15
	...	...	...	...	...	2	...	.	...	2	...	283	113
...	273	32	...	8	...	3	...	...	3	2	51	711	240
8	6	16	43	76	15	15	5	7	70	11	9	976	859
	...	1	...	...	...	1	...	...	...	...	..	2	...
...	1	...	...	1	...	...	...	...	.	...	..	26	26
104	54	71	113	90	121	29	32	14	49	134	47	2767	2983
...	...	...	1	...	...	...	...	...	21	39	13	217	265
129	30	46	91	88	106	26	48	29	1	111	62	2984	3289
...	...	...	...	2	...	...	...	..	...	...	...	3	10
...	...	2	...	...	2	...	...	...	2	1	...	26	46
...	...	2	...	2	2	...	...	...	2	1	...	29	*
...	...	20/-	...	42/-	5/-	...	...	...	/6	10/6	...	£14 16/	*
74	42	116	175	330	180	34	43	22	5	105	107	6605	6638
478	42	228	100	133	125	520	42	62	25	55	256	7439	6663
384	6	173	2	11	8	413	1	9	15	45	228	5144	3337
39	20	27	39	50	57	47	16	29	7	8	15	1098	1075
4	2	1	6	8	4	9	2	3	1	4	7	167	224
35	18	26	33	42	53	38	14	26	6	4	8	931	851

TABLE XXIII.—(*c*) SUMMARY OF OPERATIONS

CENTRAL.								
12	13	14	15	16	22	23	24	25
16286	10144	16967	17536	15671	14049	14002	14687	28549
40	42	44	222	...	...	...	..	...
...	18	...	...	...	...	2	...	...
132	665	92	...	269	713	415	609	813
3677	4039	3738	3905	445	1603	1300	1357	1771
1821	2837	1401	1519	1162	2603	2144	1285	5705
21956	17745	22242	23182	17547	18968	17863	17938	36838
1757	1414	1966	1505	846	383	1887	1242	1684
5	36	4	9	4	...	3	1	...
19	28	36	45	8	2	24	22	15
269	137	200	81	78	19	219	169	107
15	29	30	26	18	15	58	26	37
531	370	527	422	332	94	595	402	668
270	173	231	160	62	20	237	173	126
90	45	66	71	2	..	75	38	20
50	41	45	53	34	78	153	28	58
...	...	..	. .	...	...	...	...	...
147	133	489	231	115	85	250	178	387
...	...	..	1	...	...	...	...	...
85	169	109	144	68	18	42	31	16
4	1	4	1	1	1	10	1	2
...	1	2	...	2	1	4	1	3
2	4	2	1	4	2	...	...	1
4	4	1	...	2	...	1	...	...
50	70	33	44	26	4	19	2	1
...	2	...	...	...	...	3	...	...
71	26	32	45	5	2	49	36	2
...	...	...	...	...	...	...	...	...
...	4	...	2	...	...	11	4	1
71	88	39	87	25	24	38	53	116
3	2	1	10	2	4	10	1	21
71	51	115	72	58	14	86	76	103
...	...	...	...	...	...	...	...	...
2	4	1	...	2	...	...	2	...
2	4	1	...	2	...	...	2	...
£3	£1	5/-	...	15/6	...	...	12/6	...
254	92	346	352	61	83	314	29	140
63	86	80	65	61	210	130	132	957
18	24	8	1	6	170	12	70	870
21	25	30	27	25	21	52	33	42
8	2	2	3	3	4	4	6	8
13	23	28	24	22	17	48	27	34

OF SANITARY SECTION FOR THE YEAR 1928.—*Continued.*

SOUTH-EASTERN.							SOUTH-WESTERN.					CITY	1927.
26	27	33	34	35	36	37	28	29	30	31	32	1928.	
36247	51619	18221	13054	26183	18621	12467	33242	38755	27969	14348	16891	789362	803626
...	...	...	...	...	...	...	...	...	.	...	...	349	131
...	...	89	19	72	...	185	2	...	7	3	144	1930	543
608	408	473	225	524	161	418	1182	2328	2221	1679	1260	24739	27529
326	326	545	154	463	253	542	2958	5261	4623	2014	999	66370	73690
812	1060	259	442	1083	276	1814	507	327	607	323	1449	53105	52226
37993	53413	19587	13894	28325	19311	15426	37891	46671	35427	18367	20743	935855	957745
1899	2782	908	901	1155	548	548	3786	3267	3741	1939	972	61052	63963
14	2	1	...	3	...	...	...	...	1	1	...	84	73
18	28	5	13	2	3	6	45	34	39	17	3	651	780
237	362	50	146	172	54	70	499	290	439	311	90	6462	6271
17	37	6	4	12	7	1	12	6	5	9	9	999	887
740	997	462	426	534	272	295	1377	1305	1261	718	431	23113	23697
119	189	36	113	86	40	28	382	456	511	252	110	6215	6968
128	361	2	22	16	3	4	49	29	68	7	1	2487	3127
108	223	56	35	131	23	...	256	125	458	128	14	3650	3562
..	...	...	...	...	...	..	...	...	1	...	1	4	14
368	222	140	112	89	57	16	297	365	421	161	104	7261	7223
1	2	..	...	...	...	...	7	2	16	1	4	40	22
19	122	21	3	17	10	7	169	47	57	23	15	1817	2453
3	2	...	2	3	2	1	6	6	5	7	4	111	169
3	...	...	...	...	4	1	9	9	7	4	2	66	760
4	18	...	1	3	3	...	10	6	8	...	2	111	167
...	..	...	...	...	...	...	...	..	...	1	...	15	15
3	9	8	...	2	...	...	...	6	...	2	...	283	113
...	..	63	3	15	1	45	1	...	3	2	51	711	240
10	31	3	2	5	3	6	108	54	70	11	9	976	859
...	...	...	...	...	...	...	...	...	...	...	..	2	...
1	...	...	...	...	...	...	1	...	.	...	..	26	26
57	56	33	9	35	12	16	271	262	149	134	47	2767	2983
2	9	..	...	1	2	...	36	29	21	39	13	217	265
47	112	22	10	29	52	52	251	236	201	111	62	2984	3289
...	...	...	...	...	...	...	...	1	...	...	...	3	10
3	1	...	...	...	...	...	1	...	2	1	...	26	46
3	1	..	..	...	...	..	1	1	2	1	...	29	*
£1	2/6	...	...	...	...	...	...	£2 2/-	10/6	10/6	...	£14 16/	*
112	93	190	48	193	50	34	300	448	865	105	107	6605	6638
106	88	58	112	288	61	1627	49	47	125	55	256	7439	6663
63	17	44	105	251	44	1624	34	36	115	45	228	5144	3337
21	25	8	3	22	11	2	8	4	7	8	15	1098	1075
1	1	1	1	4	3	...	4	...	1	4	7	167	224
20	24	7	2	18	8	2	4	4	6	4	8	931	851

* Not previously shown separately.

TABLE XXIII.—(*c*) SUMMARY OF OPERATIONS OF SANITARY

Division.	EASTERN.						
Ward.	1	2	3	4	5	6	7
2. Common Lodging Houses.							
Number measured and registered, ...	...	...	...	...	...	...	...
Total number now on register, ...	1	...	...	10	...	...	..
With accommodation for	404	...	...	2404	...	...	..
Number of inspections by day, ...	8	...	...	629	...	...	..
Number of inspections by night, ...	...	...	...	33	...	...	..
Number of irregularities, ...	...	...	...	...	...	...	..
Number of prosecutions, ...	...	...	...	...	...	...	..
3. Boarding Houses for Emigrants and Seamen.							
Number measured and registered.	..	...	...	...	..	..	..
Total number now on register, ...	...	...	...	...	...	...	..
With accommodation for	...	...	...	...	...	...	..
Number of inspections by day, ...	...	...	...	...	..	...	...
Number of inspections by night, ...	...	...	..	...	...	...	..
Number of irregularities, ...	...	..	...	...	...	...	...
Number of prosecutions, ...	...	...	...	...	...	...	...
4. Houses Let in Lodgings.							
Number measured and registered, ...	...	...	...	...	...	...	...
Total number now on register, ...	...	...	4	2	5	1	...
Number of inspections by day, ...	..	...	10	1	...	...	...
Number of inspections by night, ...	...	...	...	11	1	...	...
Number of irregularities.	...	...	...	...	...	...	..
Number of prosecutions, ...	...	...	...	...	...	...	...
5. Farmed-out Houses.							
Number Measured and Registered.	...	...	...	10	7	...	...
Total Number now on Register, ...	...	...	...	166	39	...	...
Number of Inspections by Day, ...	...	...	...	2724	1132	...	..
,, ,, Night, ...	...	...	..	598	224	...	..
Number of Irregularities, ...	...	...	...	54	...	...	...
Number of Prosecutions, ...	...	...	...	...	...	...	...
Number of Successful, ...	...	...	...	...	...	...	...
Amount of Fines, ...	...	...	...	...	...	...	...
6. Ticketed Houses.							
Number Ticketed for first time, ...	...	...	...	...	...	...	...
Total number now on Register, ...	173	471	1038	1544	1012	303	40
Number of Visits for Ticketing and Reticketing, ...	...	...	...	...	...	...	...
Number of Inspections by Night, ...	529	1429	4398	3753	3627	1049	152
Number of Cases of Overcrowding found and warned, ...	89	210	605	523	535	138	19
Number of Prosecutions, ...	...	...	...	...	...	...	...
Cubic feet of space in worst cases of Overcrowding, instead of 400, only, ...	181	129	129	123	133	173	185
Number of Cases of Overcrowding in houses under 900 cubic feet of space, ...	...	...	11	42	13	...	...
7. Tents and Vans.							
Number of Inspections, ...	50	58	...	45	374	2176	8
Number of Irregularities, ...	...	...	...	...	...	1	..

SECTION FOR THE YEAR 1928—*Continued.*

NORTHERN.

8	9	10	11	17	18	19	20	21
...	...	...	...	...	...	...	...	...
...	...	...	1	4	1	...	...	1
...	...	...	379	953	675½	...	...	158
...	...	...	33	26	10	...	...	11
...	..	...	...	8	2	...	...	1
...	...	...	...	1	1	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	1	1	2	3	4	...	...	...
...	6	1	8	5	4	...	...	...
...	2	2	...	...	3	...	...	...
...	...	...	1	...	...	...	...	...
...	..	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	10	24	...	...	...	...
...	...	...	88	151	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	2	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	..	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	..	...	...	...	...
1386	11	58	463	1619	1374	168	...	316
31	2	8	49	39	41	20	...	...
3870	12	60	604	4753	2906	168	...	591
651	1	20	109	736	420	36	...	134
...	...	...	...	...	1	...	...	...
160	166	125	108	114	191	176	...	166
6	...	2	11	30	7	...	...	3
...	14	1	...	33	53	5	...	8
...	...	...	...	...	...	...	...	2

TABLE XXIII.—(*c*) SUMMARY OF OPERATIONS

CENTRAL.								
12	13	14	15	16	22	23	24	25
...	1	...	...	...	...	...	...	...
7	6	1	1	...	...	1	...	1
827	1065	302	343	...	...	312	...	364
115	406	35	29	..	...	38	...	32
26	16	6	5	..	...	4	...	4
20	...	...	...	...	...	23	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	..	...	...	...
...	7	3	...	...	...	...	...	...
...	298	143	...	...	...	...	...	...
...	343	56	...	...	...	...	...	...
...	36	10	.	...	...	...	...	...
...	...	1	...	...	..	...	...	...
...	...	...	...	...	...	...	..	..
2	...	...	1	1	...	2	...	...
2	3	1	3	...	...	1	...	2
34	110	...	...	2	...	10	1	8
21	22	4	...	...	...	4	4	9
...	...	...	...	..	...	...	...	...
...	...	...	...	...	..	...	...	...
7	...	1	...	..	...	2	...	...
355	...	54	...	...	..	31	...	...
2494	...	705	...	..	..	448	...	...
1434	...	248	...	..	...	132	...	...
384	...	16	...	...	...	40	..	...
1	...	...	...	...	...	1	...	..
...	...	...	..	..	...	1	...	...
...	...	...	...	...	...	...	...	..
...	...	...	...	...	...	...	..	...
257	402	1205	429	...	...	405	37	...
15	17	4	4	...	...	6	...	...
266	1689	5964	2410	...	...	1610	148	...
167	153	913	352	..	...	224	20	...
...	...	...	...	...	...	...	...	..
161	154	105	142	..	...	160	214	...
23	17	18	26	...	...	...	...	...
...	...	...	...	...	...	39	...	..
...	...	...	...	...	...	...	...	...

of Sanitary Section for the Year 1928—*Continued.*

SOUTH-EASTERN.							SOUTH-WESTERN.					CITY	1927.
26	27	33	34	35	36	37	28	29	30	31	32	1928.	
...	...	...	...	...	...	...	...	...	...	...	...	1	...
...	2	...	...	...	...	...	1	2	1	...	...	41	40
...	791	...	...	...	...	...	450	947	407	...	...	10781½	10750
...	25	...	..	...	...	...	113	109	53	...	...	1672	2166
...	12	...	...	...	...	...	4	1	7	...	...	129	157
...	...	...	...	...	...	...	...	4	1	...	...	50	89
...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	1	...	...	11	17
...	...	...	..	...	...	...	...	...	53	...	...	494	576
...	...	...	...	...	...	...	...	...	27	...	...	426	203
...	...	...	...	...	...	...	...	...	...	...	...	46	74
...	...	...	...	...	...	...	...	...	7	...	...	8	4
...	...	...	...	...	...	...	..	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	6	*
...	16	...	...	...	...	...	11	...	1	...	...	63	86
...	34	...	...	...	...	...	118	...	20	...	...	372	388
...	...	...	...	...	...	...	3	...	...	...	..	86	190
...	...	...	...	...	...	...	2	...	...	...	..	3	4
...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	. .	...	27	*
...	96	...	...	...	...	...	12	...	...	...	...	787	762
...	1340	...	...	...	...	...	255	...	...	...	...	9337	8507
...	751	...	...	...	...	...	36	...	...	...	...	3423	4219
...	45	...	...	...	...	...	...	...	...	...	...	541	900
...	2	...	...	...	...	...	...	...	...	...	...	4	2
...	2	...	...	...	...	...	...	...	...	...	...	3	2
...	£3	...	...	...	...	...	...	...	...	...	...	£3	£8
...	...	...	...	...	...	...	...	..	...	...	...	...	...
367	1543	...	...	...	...	...	594	88	511	...	124	15938	16884
...	20	...	...	...	...	...	...	...	...	...	4	260	2584
1427	6204	...	...	...	...	...	3879	616	3527	...	864	57505	56774
119	639	...	...	...	...	...	522	59	377	...	172	7943	7818
...	...	...	...	...	...	...	...	...	...	...	...	1	...
192	112	...	...	...	...	...	162	125	171	...	153	105	90
...	35	...	...	...	...	...	10	...	...	...	...	254	263
...	...	..	...	...	...	19	..	..	5	...	235	3123	3433
...	...	...	...	...	...	...	...	...	...	...	3	6	3

* Not previously shown separately.

TABLE XXIII.—(*c*) SUMMARY OF OPERATIONS OF SANITARY

District.	EASTERN.						
Ward.	1	2	3	4	5	6	7
8. Workshops (excluding Bakehouses).							
Number Measured and Registered, ...	...	2	8	3	1	...	2
Total Number now on Register, ...	61	56	78	159	59	70	40
Number of Inspections, ...	411	340	583	1634	776	912	136
Number found Dirty, ...	5	4	...	6	...	2	...
Number found Overcrowded, ...	...	...	...	...	..	...	...
Number found defective in Light or Ventilation, ...	...	...	...	...	...	...	...
Number found with inadequate or defective W.C. or Sink Accommodation, ...	...	...	...	...	1	...	...
Number of other Nuisances,...	...	1	1	2	...	...	..
Number of Prosecutions, ...	...	...	...		...	...	..
9. Bakehouses.							
Registered during year, ...	...	...	1	2	...	...	1
Total number now on register, ...	13	17	9	15	13	6	7
Number of inspections, ...	61	51	63	104	183	91	28
Number found dirty, ...	2	...	2	1	...	...	...
Number of other nuisances, ...	...	...	...	3	...	...	...
Number of prosecutions, ...	...	...	...	...	...	...	...
10. Homeworkers' Dwellings.							
Total number now on register, ...	3	15	15	17	15	8	4
Number of inspections, ...	10	35	128	46	184	13	26
Number found dirty, ...	...	...	...	...	...	...	...
11. Piggeries.							
Total number now on register, ...	1	6	...	...	...	1	...
Number of inspections, ...	11	42	...	...	...	61	...
Number found dirty, ...	...	1	...	...	...	...	...
Number of other nuisances, ...	...	...	..	...	...	...	...
Number of prosecutions, ...	...	...	...	...	...	...	...
12. Offensive Trades.							
Total number now on register, ...	9	2	4	8	1	18	2
Number of inspections, ...	50	48	40	174	25	827	17
Number of irregularities, ...	2	...	1	2	1	1	...
Number of prosecutions, ...	...	...	...	...	...	...	...
13. Rag Flock Act, 1911.							
Total number of visits.	...	8	4	6	16	4	4
Samples submitted for analysis, ...	...	4	2	2	6	3	3
Certified not to conform to standard, ...	...	...	...	...	...	...	...
Number of prosecutions, ...	...	...	...	...	...	...	...
Number of convictions, ...	...	...	...	...	...	...	...
14. Brokers' Premises.							
Total number of visits, ...	6	6	91	66	6	24	...
15. Infectious Diseases.							
Total number of visits, ...	3279	3201	4248	5325	3068	1254	1500
16. Housing Acts.							
Total number of visits, ...	236	548	2660	1243	2977	692	294

SECTION FOR THE YEAR 1928—*Continued.*

NORTHERN.

8	9	10	11	17	18	19	20	21
1	1	...	3	17	5	5	...	...
26	51	13	87	129	147	45	51	55
146	131	84	225	348	606	188	35	144
3	5	2	12	12	8	2	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	2	...	...	...	1
..	...	...	...	...	...	...	...	...
1	1	1	3	5	4	1	...	...
...	...	...	...	...	...	...	...	...
1	...	...	...	4	...	2	...	...
4	4	1	9	20	21	11	6	8
9	43	3	51	83	117	53	13	27
2	2	1	7	15	8	8	1	2
...	1	...	1	...	2	...	...	1
...	...	...	..	...	...	...	...	...
3	8	2	12	21	7	10	6	4
9	19	4	31	46	21	17	10	8
...	..	...	...	...	...	...	...	...
4	2	4	...	2	...	9	...	11
9	20	35	...	11	...	37	...	31
2	1	11	...	2	...	11	...	...
...	...	...	...	...	...	...	...	...
..	...	...	..	...	...	...	...	...
3	...	...	1	7	...	1	...	1
57	...	...	19	26	...	...	...	7
1	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	..	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...
2	8	...	1	4	5	4	...	...
4060	2144	2423	2456	4463	4416	4401	1227	1394
593	145	363	236	765	618	367	104	288

TABLE XXIII.—(*c*) SUMMARY OF OPERATIONS

CENTRAL.								
12	13	14	15	16	22	23	24	25
17	23	13	6	3	5	12	6	9
308	428	76	210	158	81	113	54	79
4699	2737	943	1367	802	213	379	181	174
28	84	9	23	13	2	6	2	3
...	...	..	...	...	...	...	..	1
1	...	...	...	1	...	...	...	...
2	...	...	...	1	...	...	3	...
125	45	16	20	9	4	5	1	...
...	...	...	...	...	..	...	...	..
...	...	...	3	...	...	2	...	...
14	4	8	16	3	4	20	9	12
62	67	14	132	35	19	127	35	58
18	9	8	20	3	...	7	4	2
1	10	2	10	5	...	9	1	...
...	...	...	...	...	...	...	..	...
4	5	3	7	4	2	2	4	3
9	2	2	16	1	4	8	8	10
...	...	...	...	...	...	...	...	...
...	...	..	...	...	5	...	...	4
...	...	...	...	...	37	...	...	38
..	...	...	...	...	...	.	...	..
...	...	...	...	...	...	..	...	1
...	...	...	...	...	...	..	...	.
2	...	1	...	...	...	...	...	...
15	...	1	...	...	...	..	...	...
...	...	...	...	...	...	...	..	...
...	...	...	...	...	...	...	...	..
46	14	4	8	18	...	4	2	8
13	3	..	...	...	...	1	1	2
...	...	..	...	...	..	...	..	...
...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	..	...
...	...	...	...	..	...	...	...	1
1856	974	10713	1635	786	735	3182	1916	2149
309	623	727	898	126	35	98	15	29

OF SANITARY SECTION FOR THE YEAR 1928—*Continued.*

SOUTH-EASTERN.							SOUTH-WESTERN.					CITY	1927.
26	27	33	34	35	36	37	28	29	30	31	32	1928.	
3	1	2	1	9	4	...	5	16	7	7	17	214	*
60	249	66	43	67	32	29	220	129	107	49	103	3788	*
212	375	282	225	203	118	107	793	343	480	167	127	21626	21589
4	11	5	2	6	...	...	24	8	11	3	..	305	301
...	...	...	...	..	...	...	...	..	...	...	...	1	...
...	...	1	...	...	...	...	...	...	...	...	..	6	11
...	...	...	...	...	...	...	...	...	...	...	1	8	34
1	3	..	...	...	...	1	10	1	7	1	1	270	291
...	..	...	...	...	...	...	...	...	...	...	...	..	5
1	...	2	...	1	2	...	...	...	...	...	...	22	*
16	31	16	12	15	7	5	24	18	17	13	5	433	*
59	74	100	62	59	27	27	45	27	78	11	13	2111	2207
1	2	4	...	3	...	...	1	1	3	2	...	139	138
...	...	1	...	...	2	...	8	1	27	5	3	93	85
...	...	...	...	...	...	...	...	...	...	...	...	...	...
15	46	5	...	12	4	3	23	21	4	7	2	326	*
48	79	10	1	33	21	12	10	13	3	13	1	911	956
...	..	...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	1	...	...	1	...	...	...	1	2	54	56
...	...	..	10	...	1	6	...	...	...	4	...	353	400
...	...	...	...	...	...	...	...	...	...	...	...	28	34
...	...	...	...	...	...	...	...	...	...	...	...	1	...
...	...	...	...	..	...	...	...	...	...	...	...	...	...
...	...	...	1	...	...	...	3	1	...	1	5	71	*
...	...	...	13	...	...	...	35	3	...	7	15	1379	1510
...	..	...	...	...	...	...	...	...	...	...	...	8	*
...	...	...	...	...	...	...	...	...	...	...	...	...	*
...	...	..	...	...	...	..	...	...	...	...	...	146	197
...	...	...	...	...	...	...	...	...	...	...	...	40	64
...	...	...	...	...	...	...	...	...	...	...	..	...	2
...	...	...	...	...	...	..	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...	1
10	4	...	...	4	...	...	3	1	1	3	...	250	324
4426	18511	1111	2346	7067	1307	1170	2827	2525	2476	2454	2157	121182	114718
172	1291	4	228	48	7	90	1889	1977	2122	770	53	23640	26489

* Not previously shown separately.

TABLE XXIII.—(*c*) SUMMARY OF OPERATIONS OF SANITARY

Division.	EASTERN.						
Ward.	1	2	3	4	5	6	7
17. Work of Female Inspectors—							
Under the Glasgow Corporation (Police) Order, 1904.							
(*a*) **Verminous Children.**							
Number of Visits to Schools, ...	146	73	230	138	76	24	29
Number of Children submitted for Inspection, ...	1987	1712	3667	2967	2455	732	805
Number of Children found Infested,	4	2	5	10	38	6	12
Number of Children found Infected,	183	262	303	229	334	72	95
Number of Children found with Fleas,	15	9	17	16	11	4	4
Number of Children found dirty, ...	44	30	67	66	122	32	42
Number of Written Notices, ...	3	2	4	23	33	6	12
Number of Children Cleaned by Guardians, ...	257	306	356	286	381	111	112
Number of Children Cleaned by Officers, ...	...	...	...	...	...	...	...
(*b*) **Homes of Verminous Children.**							
Number of houses Inspected, ...	193	290	471	452	252	201	48
Number of houses in which Lodgers were found, ...	5	3	8	6	8	10	2
Number of houses found dirty, ...	3	3	2	3	2	...	...
Number of houses with dirty bedding,	4	3	1	2	4	1	...
Number of Written Notices, ...	7	6	4	3	5	1	...
Number of Re-inspections, ...	63	95	148	138	162	120	60
Number of houses found cleaned. ...	3	3	1	5	2	...	...
Number of Bedding foundcleaned, ...	4	2	1	3	6	1	...
(*c*) **House-to-House Visitation.**							
Number of houses visited first time,	1335	1576	1612	1835	3533	1566	228
Number of houses in which Lodgers were found, ...	69	117	66	91	150	55	3
Number of houses found dirty, ...	14	10	6	11	46	13	1
Number of houses with dirty bedding,	9	9	1	4	10	3	...
Number of houses—Written Notices,	22	20	4	11	56	16	1
Number of houses—Re-visits, ...	29	34	20	30	81	38	1
Number of houses found cleaned, ...	18	11	6	8	52	13	1
Number of houses—Bedding found cleaned, ...	11	10	1	3	12	4	...
(*d*) **Re-housing Scheme Visitation.**							
Number of houses visited first time,...	52	5315	...	...	...	...	996
Number of houses in which lodgers were found, ...	...	168	...	..	...	...	9
Number of houses found clean, ...	16	3350	...	...	...	...	773
Number of houses found fair, ...	14	1562	...	...	...	...	177
Number of houses found unsatisfactory, ...	2	373	...	...	...	...	39
Number of houses found dirty, ...	...	30	...	...	...	...	7
Number of houses with dirty bedding,	...	8	...	...	...	...	...
Number of Written Notices, ...	...	27	...	...	...	...	6
Number of Re-visits, ...	3	630	...	...	...	...	194
Number of houses found cleaned, ...	...	442	...	...	...	...	125
Number of Bedding found cleaned,...	...	11	...	...	...	...	...
(*e*) **Other Work.**							
Number of nuisances reported by Female Inspectors, ...	22	62	2	10	39	29	5
Number of infectious disease cases reported by Female Inspectors,...	...	4	1	...	...	1	...

ECTION FOR THE YEAR 1928—*Continued.*

NORTHERN.								
8	9	10	11	17	18	19	20	21
52	17	50	40	82	69	22	7	53
1148	253	428	150	1179	1073	164	20	600
26	5	7	6	10	32	6	4	27
311	63	131	53	387	252	47	8	154
79	7	19	4	62	35	7	1	22
105	24	34	20	45	64	18	4	37
25	5	7	2	10	32	3	2	14
479	84	220	82	380	376	67	17	247
...	...	...	...	...	...	...	...	4
281	74	94	63	327	325	192	96	152
...	...	1	...	2	12	7	7	15
9	3	4	2	12	21	8	5	11
5	1	3	1	11	7	3	2	5
...	...	...	2	4	3	...	...	2
20	1	10	4	58	49	16	7	16
7	1	8	2	11	21	7	4	7
4	...	2	1	10	9	3	3	1
2618	187	566	1246	1937	1997	1256	497	1314
114	11	30	74	210	206	135	59	175
123	10	25	46	81	75	37	18	48
15	2	6	14	32	16	5	6	5
7	...	5	4	3	...	3	2	3
224	13	49	117	330	153	62	27	85
128	11	26	50	81	75	43	17	50
15	...	7	12	32	13	6	4	6
292	...	868	...	...	...	3942	...	...
...	..	56	..	...	...	296	...	...
263	...	547	...	...	...	2439	...	...
28	...	247	...	...	...	1195	...	...
1	...	59	...	...	...	217	...	...
...	...	15	...	...	...	24	...	...
...	...	1	...	...	...	4	..	...
...	...	15	...	...	...	9	...	...
1	...	90	...	...	...	504	...	...
1	...	71	...	...	...	252	...	...
...	...	...	...	...	...	5	..	...
10	...	...	2	3	18	20	7	18
...	...	...	...	...	...	...	...	...

TABLE XXIII.—(c) SUMMARY OF OPERATIONS

CENTRAL.								
12	13	14	15	16	22	23	24	25
61	...	65	24	10	...	4	13	9
1279	...	2822	396	200	...	1	142	155
30	...	44	5	2	...	...	4	...
43	...	217	17	15	...	...	21	19
4	...	94	2	4	...	...	10	...
15	...	70	15	1	..	...	9	4
39	...	38	6	2	...	...	2	2
83	..	357	36	22	...	...	26	43
...	...	...	...	...	...	...	...	...
164	80	513	174	35	...	2	31	53
...	10	46	19	2	...	...	5	2
2	1	4	4	...	...	...	1	1
1	1	4	4	..	...	...	...	5
1	...	2	2	...	...	...	...	...
1	4	35	29	2	...	...	...	6
1	1	5	3	...	...	...	...	2
...	1	4	1	...	...	...	...	4
7229	4007	5847	5243	684	...	3353	854	193
579	437	445	299	54	...	247	48	47
74	30	23	28	1	...	34	18	9
12	11	22	28	...	...	44	19	3
54	25	17	10	1	...	...	2	2
159	116	133	95	15	...	112	42	17
76	31	27	29	1	...	35	16	9
8	10	21	25	...	...	43	19	5
...	...	1059	7	...	...	31	...	592
...	...	13	...	...	...	3	...	31
...	...	923	7	...	..	31	...	545
...	...	130	...	...	...	...	...	46
...	...	6	...	...	...	...	...	1
...	...	...	...	...	..	...	...	...
...	...	...	...	...	...	...	...	...
...	...	...	..	...	...	...	...	...
...	...	3	...	...	...	...	...	...
...	...	...	...	...	...	...	...	..
...	...	...	..	...	...	...	...	...
...	...	...	...	...	...	...	...	...
...	...	..	...	...	...	. .	...	...

OF SANITARY SECTION FOR THE YEAR 1928—*Continued.*

SOUTH-EASTERN.							SOUTH-WESTERN.					CITY	
26	27	33	34	35	36	37	28	29	30	31	32	1928.	1927.
109	154	14	83	61	...	8	83	108	140	57	11	2122	2190
2306	3136	50	1112	624	...	44	932	2842	3454	653	187	39675	38927
32	102	5	29	31	..	5	64	129	236	46	6	970	8149
237	161	1	44	39	...	3	89	280	436	105	14	4625	
37	78	1	21	20	...	5	101	91	64	16	2	862	
48	147	7	29	29	...	3	62	89	103	6	2	1393	2355
345	487	14	120	117	...	16	109	215	259	45	7	2006	*
347	472	10	112	114	...	12	217	257	226	44	11	6150	9884
...	...	...	...	...	...	..	...	...	...	...	.	4	8
230	416	11	87	40	...	8	306	513	695	88	29	6986	8350
...	9	...	1	1	...	..	28	37	98	11	2	357	*
13	25	2	8	2	...	2	1	4	7	2	...	167	267
12	24	2	9	2	...	2	1	4	8	3	1	136	168
...	...	...	2	...	...	..	2	5	14	4	1	70	*
26	46	1	17	8	...	3	1	3	10	3	1	1163	765
12	24	1	7	2	...	2	1	1	3	2	...	149	209
8	22	1	8	2	...	2	1	3	4	3	1	115	141
1364	4216	2	57	7	...	2	3265	677	2629	174	555	63661	83308
67	426	1	5	...	...	...	218	58	480	40	17	5133	5829
68	236	...	2	2	..	...	25	7	23	3	...	1147	2255
12	64	...	1	2	...	..	8	3	21	2	...	389	
...	8	...	...	...	...	...	33	8	43	5	...	365	*
149	476	...	8	6	.	5	58	13	34	3	...	2734	5275
64	245	...	5	3	...	...	29	10	26	2	...	1198	2532
13	66	...	2	3	...	...	8	7	23	1	...	390	
1768	...	...	19	1568	...	...	...	1012	...	...	...	17521	Previously included in Section (O)— House-to-House Visitation
24	...	...	...	63	...	..	...	..	...	...	...	663	
1357	...	...	18	1270	...	...	...	962	...	...	..	12501	
318	...	...	1	262	...	..	...	40	...	...	...	4020	
58	...	...	...	1	...	...	...	4	...	...	...	761	
15	...	...	...	5	...	...	...	6	...	...	...	102	
6	...	...	...	1	...	...	...	...	...	...	...	20	
3	...	...	...	2	...	...	...	6	...	..	...	68	
323	...	...	...	253	...	...	...	7	...	...	...	2008	
60	...	..	...	5	...	...	...	6	...	...	...	962	
4	...	..	..	1	...	...	..	...	...	...	..	21	
6	...	...	...	9	...	...	6	...	...	...	..	268	755
1	...	...	...	...	..	...	...	...	...	...	..	7	162

* Not previously shown separately.

TABLE XXIV.—GLASGOW.—POPULATION; BIRTHS AND DEATHS; BIRTH-RATES AND DEATH-RATES PER 1,000; ALSO DEATHS UNDER 1 YEAR, AND DEATH-RATES PER 1,000 BIRTHS SINCE 1860.

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year.	
						Number.	Rate per 1,000 Births.
1860†	389,843	15,943	12,436	40·8	31·9	2,905	182
1861	397,673	16,537	10,936	41·6	27·5	2,544	154
1862	405,789	16,400	11,565	40·4	28·5	2,562	156
1863	413,944	16,986	13,329	41·0	32·2	2,774	163
1864	420,738	17,411	13,674	41·4	32·5	3,051	175
1865	428,123	17,956	13,914	41·9	32·5	3,097	173
1866	437,850	18,288	12,829	41·8	29·3	2,905	159
1867	446,028	18,347	12,578	41·1	28·2	2,895	158
1868	455,000	18,607	13,832	40·9	30·4	3,127	168
1869	464,332	18,495	15,648	39·8	33·7	3,411	184
1870	471,453	19,355	13,955	41·1	29·6	2,991	155
1871	491,900	18,867	15,790	38·4	32·1	3,608	191
1872	494,824	20,158	14,053	40·7	28·4	3,198	159
1873	494,847	19,487	14,499	39·4	29·3	3,255	167
1874	498,270	20,039	15,845	40·2	31·8	3,240	162
1875	499,480	20,825	15,384	41·7	30·8	3,388	163
1876	502,299	20,981	13,763	41·7	27·4	3,166	151
1877	504,487	21,124	13,823	41·9	27·4	3,106	147
1878	507,420	20,622	14,157	40·6	27·9	3,285	159
1879	508,048	19,751	12,498	38·8	24·6	2,504	127
1880	509,732	18,912	13.304	37·1	26·1	2,842	150
1881	512,034	19,106	12,916	37·3	25·2	2,745	144
1882	517,904	19,735	13,046	38·1	25·2	2,959	150
1883	523,154	19,911	14.577	38·1	27·9	3,091	155
1884	528,459	20,557	13,942	38·9	26·4	3,094	151
1885	533,817	19,861	13,492	37·2	25·3	3,100	156
1886	539,231	19,862	13,104	36·8	24·3	2,786	140
1887	544,700	19,328	12,135	35·5	22·3	2,676	138
1888	550,226	19,309	11,681	35·1	21·2	2,560	133
1889	555,808	19,503	13,139	35·1	23·6	3,008	154
1890	561,447	19,279	13,374	34·3	23·8	2,880	149
1891	567,143	19,857	14,324	35·0	25·3	2,946	148
1892	669,059*	22,815	15,218	34·1	22·7	3,168	139
1893	677,883	23,173	15,798	34·2	23·3	3,649	157
1894	686,820	22,644	13,673	34·0	19·9	2,937	130
1895	695,876	22,803	16,344	32·8	23·5	3,538	155
1896	705,052	24,029	14,385	34·1	20·4	3,278	136
1897	714,919	23,880	15,727	33·4	22·0	3,826	160
1898	724,349	24,262	15,333	33·5	21·2	3,792	156
1899	733,903	24,249	15,828	33·0	21·6	3,696	152
1900	743,969	24,362	16,393	32·7	22·0	3,778	153
1901	761,925	24,206	16,197	31·8	21·2	3,607	149
1902	762,789	24,722	15,532	32·4	20·4	3,206	129

* Extended City.

† For earlier years, see Report for 1910, Table liii.

Table XXIV—*Continued.*

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year.	
						Number.	Rate per 1,000 Births.
1903	763,654	25,135	15,073	32·9	19·7	3,663	146
1904	764,521	24,754	15,414	32·4	20·2	3,606	146
1905	765,389	24,316	14,460	31·8	18·9	3,195	131
1906	780,192*	24,560	14,889	31·5	19·1	3,223	131
1907	781,080	24,006	15,659	30·7	20·0	3,116	130
1908	781,969	23,915	15,265	30·6	19·5	3,284	137
1909	782,860	23,140	15,242	29·6	19·5	3,073	133
1910	783,785	22,222	13,395	28·4	17·1	2,694	121
1911	784,680	21,755	13,899	27·7	17·7	3,016	139
1912	785,600	22,044	13,797	28·1	17·6	2,740	124
1913‡	1,021,789*	28,688	17,693	28·1	17·3	3,706	129
1914	1,028,440	29,462	17,522	28·6	17·0	3,913	133
1915	1,035,091	27,943	20,159	27·0	19·5	4,007	143
1916	1,041,742	27,094	16,601	26·0	15·9	2,996	111
1917	1,048,393	24,030	16,691	22·9	15·9	3,089	129
1918	1,055,044	23,524	18,362	22·3	17·4	2,660	113
1919	1,061,695	25,835	18,237	24·3	17·2	2,937	114
1920	1,068,346	32,626	16,765	31·5	15·7	3,477	107
1921	1,075,000	29,712	15,625	27·6	14·5	3,138	106
1922	1,081,933	28,298	17,850	26·2	16·5	3,401	120
1923	1,088,987	26,710	14,875	24·5	13·7	2.388	89
1924	1,095,969	25,330	16,868	23·1	15·4	3,005	119
1925	1,097,841	25,416	15,336	23·2	14·0	2,591	102
1926	1,121,546*	24,541	15,731	22·1	14·2	2,548	104
1927	1,130,675	23,578	15,439	20·9	13·7	2,527	107
1928	1,147,108	23,649	15,701	20·6	13·7	2,525	107

* Extended City.

‡ Births and Deaths from 1913 are corrected for transfers.

PART II

ANNUAL REPORTS

OF

FEVER AND TUBERCULOSIS HOSPITALS AND SANATORIA

FOR THE YEAR

1928

BELVIDERE FEVER HOSPITAL.

During the year 1928, 5,903 patients were admitted to hospital. On 1st January there remained in hospital from the previous year 626 patients, and on 31st December 665 were in residence. The admissions were 164 less than in the previous year, but still may be considered as in excess of the average of recent years.

The average duration of residence of patients who recovered was 37 days; in fatal cases 11 days.

5,114 patients were discharged well, and 750 deaths occurred, the mortality rate being 12·8 per cent.

Scarlet fever admissions were fewer than in 1927 by almost 400, and in diphtheria there was also a considerable decrease. The admissions for pneumonia, however, numbered 1,547, an increase of almost 300. In both scarlet fever and diphtheria relatively low death-rates prevailed, but the high mortality in pneumonia, combined with the increased admissions, materially affected the general mortality rate, raising it from 11 per cent. in 1927 to 12·8 per cent. in 1928. Towards the end of the year, particularly in November and December, the pressure on the pneumonia wards was very great, and increased accommodation had to be provided. During December no less than twelve wards were set apart for pneumonia and a further ward was in preparation.

Condition of Patients on Admission in relation to high Mortality.—181, or 24·1 per cent. of the total deaths occurred within forty-eight hours of admission to hospital. In a hospital dealing almost entirely with acute disease, it must be expected that a proportion of the patients will be admitted in a gravely ill condition. The fact that 24·1 per cent. of the fatal cases were practically moribund on admission is very important, and it raises the question of the desirability of removing patients so seriously ill, unless where there is definite hope of relief from some specific or operative remedial measure.

It need hardly be repeated that patients gravely ill, especially those suffering from pneumonia and puerperal sepsis, nearly all suffer in transport. In puerperal sepsis, if there is peritoneal involvement, the transport of the patient in the horizontal position is undoubtedly harmful, and in lobar pneumonia, at the stage between the fifth day and crisis, few patients stand an ambulance journey well. It is, of course, appreciated that the home conditions of such patients may be undesirable, but it would appear that the effect of removal does not always receive sufficient consideration. The nurse who accompanies the ambulance is instructed that if, in her opinion, a patient is too ill for removal, the doctor certifying should be again consulted before the patient is transferred to the ambulance. This procedure usually only results in delay. The doctor is rarely available. If he is, he usually insists on removal.

Physical Condition.—In the reports for 1926-1927 some improvement in the physical condition of the children was recorded, but during 1928, although the standard of physique did not deteriorate, no further improvement was noted. The general standard of cleanliness of most of the children admitted left much to be desired. A considerable percentage were dirty and verminous, and many suffered from sores and glandular enlargement resulting from their verminous condition.

Scarlet Fever.—As already recorded, the admissions were almost 400 less than in 1927. Only 11 deaths occurred among 1,365 patients treated. The disease was therefore of mild type, and the mortality rate was 0·8 per cent. as contrasted with 0·9 per cent. in 1927. During the last four months of the year the type of the disease increased somewhat in severity, and complications were more frequent.

Serum Treatment.—The routine indicated in last year's report with regard to the use of scarlatinal antitoxin was adhered to. When administered in 5 or 10 c.c. doses the antitoxin proved entirely satisfactory as a prophylactic, but smaller doses were found to give too brief protection. In the treatment of the more severe cases of scarlatina it proved of great value, especially when administered early in the disease. Unfortunately, some of these cases presented difficulties of diagnosis, and came under observation too late to benefit appreciably from serum treatment. Increased experience has made it more than ever apparent that the benefit of serum treatment is closely related to the stage at which it is initiated, and that generally dramatic results may only be expected when serum is administered early, *i.e.*, not later than the fourth or fifth day of illness.

For many years the type of scarlet fever prevailing in Glasgow has become progressively milder. During the last decade the mortality has not exceeded 2·5 per cent. Until four years ago, however, the usual figure was somewhere in excess of 2 per cent. In 1925 treatment by scarlatinal antitoxin was commenced, and it is interesting to record that the mortality averaged over that period is 1·4 per cent. During the four years 6,511 cases were dealt with and approximately one-fourth of them were serum treated. It is difficult to ascertain to what extent serum treatment has entered into this lessened mortality, but, undoubtedly, it has been an important factor and has fully justified its use. In assessing its value also it should be borne in mind that the incidence of complications and the duration of stay in hospital has been reduced.

The Dick test and Schultz-Charlton reaction were employed in certain doubtful cases and proved helpful in diagnosis.

During November a group of four cases with unusual rash distribution came under observation. Constitutional symptoms were almost negligible. Pyrexia, if present, did not exceed 100°F. Sore throat was exceedingly slight, or absent, although usually some injection of the fauces could be observed. The following detailed description of the appearance of one case is applicable to the group. Female child, R.R., 11 years. The child is naturally pale, but there is nothing abnormal in the fauces except perhaps that the lips look a little more red than usual. The eyes are normal and the nose appears normal. The tongue is coated in its entirety with thin white fur. Papillæ not prominent. The palate is not injected and appears normal. The peritonsilar area is sharply defined by an area of mild injection of dull colouration, unlike the usual intense injection of a scarlatinal throat. *Rash*—there is no trace of rash on the face nor on the neck. The trunk, both in front and behind, seems to be entirely free. *Upper limbs*—over the prominence of each elbow there is a small, almost circular area, about two inches in diameter, which exhibits a uniform erythema. Here the skin is tense, and the whole area seems slightly raised. The shoulder and upper arm area are free from rash, but on the extensor aspect of the arm for about three inches above the elbow there is a coarse, punctuate erythema, coarser than is usual in Scarlatina, and not very intense. Extending downwards from the elbows and increasing in intensity towards the hands there is a fine, punctate, scarlatiniform erythema on both extensor and flexor aspects. On the backs of the hands and on the fingers, and to a slighter extent on the palms, a pronounced, fine, punctate erythema persists. *Lower limbs*—on the buttocks there is a sparse, coarse, blotchy erythema. This extends down both legs and becomes finer on the thighs. As the knees are approached the rash becomes more profuse, and it is quite scarlatiniform over the inner aspects of both knee joints. On the patellar region the condition is similar to that at the elbows, but is not so marked. The rash fades about three inches below the knees but appears again two inches above the ankles. Here it is coarsely punctate. The coarse erythema extends over the dorsal aspects of both feet, and is particularly abundant on the inner metatarsal area. It does not extend to the soles. In the groins there is just the suggestion of a faint punctation.

On clinical grounds it was possible to exclude Rubella. The reactions to repeated Dick tests were compatible with scarlet fever, and subsequently in two of the cases desquamation occurred.

Scarlet Fever and Diphtheria.—As in past years, a number of cases were admitted suffering coincidently from these infections, but there was very little cross-infection of the wards. The occurrence of scarlet fever in the diphtheria wards—one of the most harassing problems of the past—is now readily controlled. Dick testing and liberal passive immunisation have to a large extent prevented secondary cases in exposed diphtheria wards, and the " bed loss " from this source has been greatly diminished. A similar result has been obtained in scarlet fever wards exposed to diphtheria by swabbing, Schick testing, and immunisation.

It is interesting to again record that in no instance did diphtheria follow the removal of tonsils during the course of scarlet fever.

Aural Work.—Dr. Stephen Young reports as follows :—

" In cases with acute otitis media, where discharge persisted in spite of conservative treatment, tonsils and adenoids were removed, and, in the majority, the discharge from the ears ceased, allowing of their dismissal in little over the normal period of residence. In cases with purulent rhinitis, removal of adenoids and tonsils usually resulted in early cessation of discharge. Modified mastoid operation was required in some cases of acute otitis with mastoiditis. The usual cases of septic tonsillitis with quinsy were successfully dealt with.''

Dipththeria.—1,139 cases were treated to a conclusion, 505 males and 634 females. The mortality rate, 5·7 per cent., was higher than in the two preceding years, but well under the average for the period 1920-1925.

Severe cases were more frequent than during the previous year. 65 deaths occurred, but of these 32 were practically moribund on admission and died within forty-eight hours. Four true hæmorrhagic cases were met with. Coincident pneumonia was present in 17 of the fatal cases. Laryngeal cases, usually associated with some faucial or nasal involvement, were more numerous than usual. The dosage of serum was on the same scale as the previous year, namely, from 4,000 to 50,000 units. Very severe infections, other than laryngeal, received antitoxin intravenously, where that method was practicable. In pure larnygeal cases, namely, those in which the major issue was obstruction, small repeated doses of antitoxin intramuscularly were employed with the object of gradual dispersal of the membrane, and in the hope that rapid separation, with its attendant risk of sudden and complete obstruction, might be avoided.

Schick Test and Dick Test.—As hitherto, probationer nurses joining the staff during the year were offered the Schick test. 32 per cent. reacted positively, and were submitted to a full immunising course. (This figure does not include a batch of nurses who were tested at the end of the year and who had not yet been immunised.) No case of diphtheria occurred among those immunised nor among those who gave a negative reaction.

In last year's report reference was made to a nurse who completed a full immunising course and who developed diphtheria thirteen months later. Another instance of this kind falls to be recorded, namely, a nurse who received the last four immunising doses on 27th December, 1926, and who developed clinical diphtheria (confirmed bacteriologically) on 11th September, 1928. Both had been retested in March, 1927, and had been found immune. In the one case protection lasted only thirteen months and in the other eighteen months from the date of the final immunising dose. Schick testing and active immunisation of the probationer nurses has now been practised for five years, and the two examples quoted are the only instances where the process has failed to protect for the whole period of training.

Dick Test.—Probationer nurses who develop scarlet fever nearly all do so within the first two or three months of service, and testing and immunisation would not appear to be of value unless undertaken before the nurses joined the staff. Probationers, as a rule, are not allocated to scarlet fever ward duty until they are six months in hospital, and this arrangement, no doubt, helps to keep down the incidence of infection. Under these circumstances, the Dick test has been employed only to a limited extent among the staff, and active immunisation has not been pursued. In 49 probationer nurses tested, only 5 positive reactors were found, namely, 10·2 per cent.

In conjunction with passive immunisation, the test has been extensively used among patients exposed to scarlet fever infection. It has also been made use of to a considerable extent as an aid to diagnosis in doubtful cases. In this connection the Schultz-Charlton reaction has occasionally been helpful.

Pneumonia.—1,465 cases were dealt with, of which 1,388 came under the "acute primary" classification. 77 were "influenzal." In addition, 47 cases of uncomplicated influenza were treated. The mortality among the pneumonia cases was high, almost 22·4 per cent. In primary pneumonia it was 22·5 per cent., in influenzal pneumonia 20·8 per cent. These rates are practically the same as pertained in 1927. Admissions were most numerous in the first and last quarters of the year, and particularly in December there was a very large increase. The prevailing type of disease in children under 5 years was bronchial, although a few lobar cases were met with. Towards the end of the year, when the incidence greatly increased, roughly 80 per cent. were of bronchial type. In male adults the type was essentially lobar. In females the lobar type was not nearly so frequent, and the bronchial variety was correspondingly increased. During the epidemic period towards the close of the year this was most marked. Whereas roughly 90 per cent. of the male cases were lobar, in females the figure for this type was only about 30 per cent. In elderly patients of either sex the type was generally bronchial. In children the bronchial type varied in character and severity, and three distinct groups were discernable :—

Group I.—With a brief pyrexia of 3-7 days and rapid subsidence of physical signs.
,, II.—With prolonged pyrexia and marked toxaemia.
,, III.—Very severe cases with extensive physical signs and cyanosis—usually rapidly fatal.

In children enteritis was by far the most frequent complication. Other complications were relatively unimportant, the commonest being otitis media, conjunctivitis, stomatitis, and rhinitis. Empyema was rare. In adults, pleurisy, with or without effusion, was the most frequent complication.

A high proportion of the patients were young infants; 467, or 32 per cent., were under two years of age. Among these the mortality rate was high, namely, 32·8 per cent. Babies under six months were again admitted in considerable numbers (91 cases), and further experience has confirmed the observations in last year's summary that such children "were often very collapsed on admission," and that, "even under the best conditions of transport, the journey to hospital militates against them."

Of the 1,465 patients treated to a conclusion, 138, or 9·4 per cent., were 45 years or over, and among this class the very high mortality rate of 50 per cent. was recorded. If the two classes where mortality was highest, namely, children under 2 years and adults of 45 years and over, were excluded, the mortality rate among the remaining 860 cases would be slightly in excess of 12 per cent. Over 25 per cent. of the fatal cases were moribund on admission and died within forty-eight hours.

A large number of the adult lobar cases were received late in the disease, at the period between the 5th day and crisis. Attention has already been directed to the serious effect of transport on such patients, and to the need for careful consideration of all the circumstances before removal is undertaken.

Venereal Disease.—Details of the work of this department appear elsewhere, but, in view of the considerable number of patients dealt with and the varied nature of the work, a brief summary seems called for. On 31st December, 1928, there remained in hospital 20 patients, and 228 indoor cases were treated and discharged during the year. These were classified as follows :—

Balanitis, ...	3
Gonorrhœa, ...	120
Gonorrhœa and Soft Chancre, ...	4
Soft Chancre, ...	14
Stricture, ...	5
Syphilis, ...	63
Syphilis and Gonorrhœa, ...	10
Syphilis and Soft Chancre, ...	3
Venereal Warts, ...	3
Conditions other than V.D., ...	3
	228

635 injections were administered as follows :—

Bismostab, ...	414
Kharsivan, ...	3
Neokharsivan, ...	218
	635

In addition to the above, there has been a considerable volume of minor surgery, as the ward serves as a centre for carrying out operative work which cannot be conveniently performed at the outdoor cliniques. The available beds have been fully occupied throughout the year.

Enteric Fever.—The admissions for the enteric group appear to be steadily diminishing, only 33 being recorded. 29 were treated to a conclusion, of whom 3 died, the mortality rate being 10·3 per cent. Most of the cases belonged to the Para B. group. The 33 admissions included all shipping cases. When contrasted with pre-war days the decrease in the incidence of enteric infections has been very remarkable, and a group of four wards which hitherto was set apart for this disease is now utilised for pneumonia patients.

Measles.—Only 126 cases were treated, and of these 23 died. The mortality rate was therefore 18·3 per cent. The accommodation for this disease was very limited. Severe enteritis was present on admission in a large number of the cases, and the high mortality was attributable to complications rather than to any special severity of type. Many of the cases, indeed, were only hospitalised long after the rashes had faded and when grave pneumonic or enteritic symptoms had appeared. The high mortality recorded is therefore no index of the rate pertaining in measles cases generally, but applies to a group of cases with severe complications. The great majority of the cases were in young children, and few opportunities of obtaining convalescent serum occurred. The small quantity obtained was utilised successfully for the protection of contacts.

Whooping-cough.—365 cases of whooping-cough were treated, mostly cases selected on account of their severity or because of serious complications. A very high mortality rate was therefore recorded, almost 34 per cent. Most of the cases were already complicated by broncho-pneumonia or enteritis on admission, a considerable number being certified as broncho-pneumonia, and, in addition to that disease, found to be in the early catarrhal stage of whooping-cough. 54 per cent. of the cases were under two years of age. Malnutrition was a frequent feature, and some of the children were grossly verminous and suffered from septic sores. The heavy mortality, however, must in the main be attributed to complications rather than to the severity of the disease itself. There were practically no examples of cases with very frequent and severe paroxysms associated with epistaxis or subconjunctival ecchymosis.

In a group of 64 cases the blood calcium was estimated by Dr. M‘Crorie. In 34 cases it was found to be below normal, averaging 7·8 mg. per 100 c.c. (normal, 9-11 mg. per 100 c.c.). In 30 cases it was within normal limits. A control group of broncho-pneumonia cases (without whooping-cough) averaged 9·4 mg. per 100 c.c. In general, those cases with diminished blood calcium exhibited more severe symptoms. Treatment with calcium sodium lactate for seven days usually restored the blood calcium to normal, and was definitely associated with improvement, diminishing the frequency and severity of the spasms.

Ephidrine, which is favourably regarded by some, was tried alone and in combination with other drugs, but did not appear to influence the course of the disease to any extent. Its action is claimed to be most marked in the early catarrhal stage of the disease. The majority of the admissions were well advanced in the paroxysmal stage, and were probably too late in the disease to yield an appreciable response.

Cerebro-spinal Fever.—46 verified cases of this disease were treated to a conclusion. The incidence of the disease, while still relatively low, was greatly increased compared with the last few years. 20 of the cases were children under two years of age, and 17 of these died. The disease was of the ordinary sporadic type and no rashes were observed. The mortality over all was 67 per cent. Errors in certification were again numerous.

Rubella.—14 cases of rubella were admitted, nearly all erroneously certified as scarlet fever.

Poliomyelitis.—17 verified examples of this disease came under observation. For a brief period, in August and September, it exhibited considerable activity, and threatened to assume epidemic proportions. The cases were of moderate severity, and two deaths occurred, both from an acute ascending paralysis. A considerable number of diverse conditions were erroneously certified poliomyelitis.

Chickenpox.—Chickenpox was prevalent. Many of the cases admitted to hospital were complicated by other diseases, especially scarlet fever, pneumonia, and surgical conditions. Among 192 cases treated two deaths occurred, attributable to chickenpox. Both were examples of Varicella Gangrenosa, one of them in a marasmic infant. In a number of cases the lesions were exceptionally profuse, and in a few cases were distributed abundantly on the limbs and on the palms and soles. In no case, however, was the diagnosis in doubt. No instance of herpes zoster giving rise to chickenpox occurred during the year.

Puerperal Fever.—In spite of all efforts to control this disease it continues to increase. 291 cases were admitted during the year, an increase of 70 over the figure for 1927. At the date of this report 288 of these have been treated to a conclusion. There were 56 deaths, equivalent to a mortality rate of 19·4 per cent. The following summary of the work of this ward has been prepared by Dr. Vallance, the medical assistant in charge. It should be noted that the figures in the summary are based on admissions, and do not strictly correspond with those in the tabular statement, which represent dismissals during the year.

Summary of Cases of Puerperal Sepsis for the Year 1928.

The number of confirmed cases of Puerperal Sepsis admitted was 291. The number of altered diagnoses was 52.

Altered Diagnosis.

Abortion—		
Simple, ...	10	
Threatened,	2	
Inevitable,	6	
Incomplete,	6	
	—	24
Lung Conditions—		
Acute Lobar Pneumonia,	2	
Broncho-Pneumonia and Pleurisy,	1	
Chronic Bronchitis and Erysipelas of Face,	1	
	—	4

Other Pelvic Conditions—

Perineal Slough following Perineorrhaphy and Septicæmia,	1	
Post-operative Septic Endometritis, ...	1	
Vesico-vaginal Fistula, ...	1	
Metrorrhagia and Secondary Anæmia, ...	1	
Fibromyomata of Uterus, ...	1	
Cervical Laceration, ...	2	
Chronic Endometritis and Endocervicitis, ...	2	
	—	9

Pregnancy and Parturition—

Albuminaria, ...	1	
Retained Membranes, ...	1	
Post-partum Jaundice, ...	1	
	—	3

Other Infectious Diseases—

Cerebro-spinal Meningitis, ...	1	
Influenza, ...	1	
	—	2

General Conditions—

Lysol Poisoning, ...	1	
Constipation, ...	2	
Cerebral Hæmorrhage, ...	1	
Pyelitis, ...	1	
Cellulitis of Foot, ...	1	
Catarrhal Jaundice, ...	1	
Popliteal Embolism, ...	1	
Arthritis of Right Hip,...	1	
Right Otitis Media, ...	1	
	—	10
		—
		52

Age Distribution—

Under 20 years, ...		... ...	16
20 and under	25,	... ...	76
25 ,,	30,	... ...	69
30 ,,	35,	... ...	59
35 ,,	40,	... ...	50
40 ,,	45,	... ...	20
45 ,,	50,	... ...	1
			291

Time of Pregnancy—	All Cases	Fatal Cases
Full time, ...	226	47
Premature, ...	16	2
Abortion, ...	49	7

State of Infant at Birth—

Alive, ...	225	46
Dead, ...	17	3

Number of Pregnancies—

Pregnancies,	1	2	3	4	5	6	7	8	9	10	11	12	13	16	17
All Cases, ...	99	43	34	27	22	13	15	12	7	8	4	4	1	1	1
Fatal Cases,	15	5	10	10	4	1	2	2	1	3	1	2	—	—	—

	All Cases	Fatal Cases
Labour—		
Natural Birth,	177	33
Instrumental,	54	14
Breech,	11	2
Attendance at Birth—		
Doctors.	37	10
Midwives,	128	22
Doctor and Midwife,	80	17
None,	46	7
State of Delivery of Placenta—		
Whole,	229	41
Broken,	46	8
Retained,	11	6
Placenta Prævia,	2	1
No History of Delivery,	3	—

(Number of patients delivered in Maternity Hospitals or Homes, 27 = 9%).

	All Cases	Fatal Cases
Lesions Found—		
Perineal Lacerations,	75	20
Subinvolution of Uterus,	61	15
Cervical Lacerations,	52	10
Septic Abortions,	49	—
Retained or Broken Placenta,	44	10
Vaginal Lacerations or Sloughs,	41	7
Septic Endometritis,	38	10
Septicæmia (clinical),	20	20
Phlebitis,	17	2
Parametritis,	16	5
Post-partum Anæmia,	11	3
Retroflection of Uterus,	9	—
Generalised Peritonitis,	8	8
Salpingitis,	8	2
Vulvo-vaginitis,	8	7
Pyosalpinx,	6	—
Phlegmasia Alba Dolens,	6	2
Acute Mastitis,	4	—
Parametritic Abscess,	4	—
Rectocele,	4	—
Bronchitis,	4	1
Salpingo oophoritis,	3	2
Pelvic Cellulitis,	3	3
Pelvic Peritonitis,	3	—
Acute Lobar Pneumonia,	3	1
Cystocele,	3	—
Endocarditis,	2	—
Scabies,	2	—
Septic Rash (papular and blotchy),	2	2
Other disorders and affections (which includes 1 case of subacute yellow atrophy of the liver, and cases of pyelitis, nephritis, varicose veins, otitis media, &c.),	14	—
Thrombo phlebitis, 2 ; External hæmorrhoids, 3 ; Subacute yellow atrophy, 1 ; Varicose veins, 2 ; Otitis media, 1,	—	9
Bacteriological Findings—		
Organisms cultured from Cervical Swab.		
Streptococci,	109	22
Gram Positive Diplococci,	65	10
Staphylococci,	27	4
B. Coli,	41	6
Pneumococci,	9	2
Diphtheroids,	1	—

Bacteriological Findings—(continued).

Mixed Infections.	All Cases	Fatal Cases
B. Coli and Gram Positive Diplococci,	7	—
B. Coli and Streptococci,	3	—
Staphylococci and Streptococci,	2	—
B. Coli and Staphylococci,	3	3
B. Coli, Streptococci and Staphylococci,	1	1
B. Coli and Pneumococci,	1	—
B. Coli, Streptococci and Diptheroids,	1	—
B Coli, Gram Positive Diplococci and Wasserman Reaction, + +	1	1
No Growth or no Cervical Swab,	—	7
Associated with Venereal Infections.		
Gonorrhœa,	—	—
Syphilis (Wassermann Reaction + +),	6	—

The figures in the column to the right in the above tables refer to an analysis of 56 fatal cases. Of these 6 patients were removed from hospital and 50 from their own homes.

Pyrexia—

56 Fatal cases.

	Number of Days.										
	1st	2nd	3rd	4th	5th	6th	7th	8th	14th	21st	Over 21st
Onset of fever after birth,	15	9	7	3	7	4	1	—	5	—	1
Days febrile before admission.	21	11	9	4	2	3	—	1	3	2	—
Duration of fever in hospital before death,	5	6	12	4	8	4	6	—	8	2	1

One case became fevered on day of birth, two cases two days before abortion, and one case three days before abortion.

Cause of Death—

Septicæmia,	26
Septicæmia and General Peritonitis,	5
Generalised Peritonitis,	9
Sepsis and Post-partum Anæmia,	7
Embolism,	2
Chronic Carditis and Pulmonary Infarction.	1
Pulmonary Tuberculosis,	1
Acute Lobar Pneumonia,	1
Broncho-pneumonia,	2
Subacute Yellow Atrophy of Liver,	1
Endocarditis,	1

THOMAS ARCHIBALD,
Physician Superintendent.

16th March, 1929.

BELVIDERE HOSPITAL—Statement of Cases Treated According to Sex.

Data Based on Dismissals and Deaths for Year 1928.

Disease.	In Hosp. 1st Jan.		Admitted.		Died.		Dismissed.		Remaining in Hospital, 31st Dec.		Mortality per cent.		Average Residence (Days)			
													Dismissals		Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Typhus,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric,	...	1	13	20	2	1	8	18	3	2	20·0	5·3	49	51	22	26
Continued and Undefined,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal,	...	28	...	291	...	59	...	231	...	29	...	20·3	...	40	...	6
Smallpox,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever,	88	95	582	801	4	7	579	775	87	114	·7	·9	42	45	26	18
Diphtheria and Memb. Croup,	78	87	482	616	30	35	475	599	55	69	6·0	5·5	37	37	7	5
Erysipelas,	...	...	...	1	...	...	...	1	...	...	...	...	...	24	...	...
Cholera,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-spinal Fever,	2	1	25	21	18	13	8	7	1	2	69·2	65·0	47	72	10	15
Ophthalmia Neonatorum,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trachoma,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Encephalitis Lethargica,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Polioencephalitis,	...	...	1	...	...	...	1	...	...	...	...	...	33	...	...	...
Acute Poliomyelitis,	...	...	9	8	2	...	7	8	...	...	22·2	...	32	39	2	...
Acute Primary Pneumonia,	74	34	878	586	194	118	643	433	115	69	23·2	21·2	31	31	8	14
Acute Influenzal-Pneumonia,	...	1	50	33	10	6	36	25	4	3	21·8	19·4	27	32	6	2
Malaria,	...	...	1	...	...	...	1	...	...	...	...	...	8	...	...	...
Dysentery,	...	...	11	7	1	1	8	4	2	2	11·1	20·0	22	20	2	1
Relapsing Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trench Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis,	...	...	11	8	2	3	8	5	1	...	20·0	37·5	29	19	3	31
Other forms of Tuberculosis,	...	...	19	18	18	18	1	...	..	...	94·7	100·0	25	...	10	11
Measles,	13	11	58	44	17	6	54	49	...	...	23·9	10·9	37	37	21	13
German Measles,	...	...	7	7	...	...	6	5	1	2	...	...	13	21	...	...
Whooping-Cough,	16	23	180	185	67	56	112	130	17	22	37·5	30·1	54	53	16	18
Chickenpox,	12	6	108	88	1	1	109	83	10	10	0·9	1·2	36	38	10	29
Mumps,	...	...	3	1	...	...	2	1	1	...	...	...	10	11	...	...
Venereal Diseases,	18	...	230	...	3	...	225	...	20	...	1·3	...	32	...	39	...
Influenza,	1	1	36	15	...	...	33	14	4	2	...	...	17	22	...	...
Babies, with mothers,	...	...	1	3	...	...	1	3	...	...	...	...	26	12	...	...
No Apparent Disease,	1	...	5	6	...	...	6	6	...	...	...	...	14	10	...	...
Others,	19	16	201	233	36	21	178	216	6	12	16·8	8·8	25	23	8	14
Total,	322	304	2,911	2,992	405	345	2,501	2,613	327	338	13·9	11·7	36	38	10	12

BELVIDERE HOSPITAL.—Statement showing Age and Sex Distribution of Cases Dismissed, and Deaths during the Year 1928.

	Age	Typhus.	Enteric.	Puerperal	Ophthalmia Neonatorum.	Scarlet Fever.	Diph. and Mem. Croup.	Erysipelas.	Cerebro-spinal Fever.	Malaria.	Acute Polio-myelitis.	Polio-encephalitis.	Acute Primary Pneumonia.	Acute Influenzal-Pneumonia.	Venereal Diseases.	Dysentery.	Pulmonary Tuberculosis.	Other forms of Tuberculosis.	Measles.	German Measles.	Whooping-Cough.	Chickenpox.	Mumps.	Influenza.	Babies with Mothers	No apparent Disease	Others.	Total
Cases (including Deaths).																												
Male.	– 1	...	1	...	...	3	13	...	9	...	...	...	135	...	...	...	...	2	10	...	40	11	...	...	1	1	49	2
	– 2	...	...	..	...	12	47	...	3	...	2	..	134	5	...	...	...	3	28	...	58	13	...	...	...	...	26	3
	– 3	...	1	...	...	40	48	...	2	...	1	...	61	...	...	1	...	3	12	...	36	12	...	...	...	...	15	2
	– 4	...	1	...	..	47	50	...	1	...	1	...	31	1	...	1	...	2	5	...	19	17	...	...	...	1	16	1
	– 5	...	...	...	...	53	57	...	1	...	1	..	45	...	...	...	...	1	6	1	16	13	1	1	...	1	13	2
	– 10	...	1	...	...	246	181	...	2	...	3	1	103	3	...	2	...	4	9	3	10	21	...	5	...	2	28	6
	– 15	...	1	...	...	85	58	...	1	...	1	...	39	4	...	...	...	1	...	1	...	3	...	2	...	1	7	2
	– 25	...	2	...	..	66	33	...	4	...	...	...	101	10	53	1	6	1	1	...	...	6	1	8	...	...	31	3
	– 35	...	2	...	...	25	13	..	3	...	...	...	56	6	101	...	2	2	...	1	...	12	...	8	..	...	8	2
	– 45	...	1	...	...	4	4	...	...	1	...	...	49	5	42	4	1	...	...	...	...	2	...	6	...	...	8	1
	45 +	...	...	...	...	2	1	...	...	...	...	...	83	12	32	...	1	...	...	...	...	...	...	3	...	...	13	1
	Total,	...	10	...	...	583	505	...	26	1	9	1	837	46	228	9	10	19	71	6	179	110	2	33	1	6	214	2,9
Female.	– 1	...	...	...	...	1	10	...	7	...	...	...	90	...	...	...	...	...	4	...	35	12	...	...	3	...	17	1
	– 2	...	...	...	...	13	29	...	1	...	...	...	100	3	...	...	...	1	17	...	62	9	...	...	...	...	24	
	– 3	...	...	...	...	37	42	...	2	...	3	...	82	3	...	...	...	2	9	...	42	10	...	1	...	...	16	
	– 4	...	...	...	...	48	44	...	...	...	1	...	41	1	...	...	1	3	10	...	18	13	...	...	...	2	10	1
	– 5	...	...	...	...	72	50	...	...	...	1	...	18	...	...	...	...	...	4	2	15	4	...	1	...	...	7	1
	– 10	...	3	...	...	332	244	...	4	...	..	...	76	8	...	3	...	3	10	2	13	31	...	2	...	2	24	
	– 15	...	2	...	...	121	85	...	2	...	1	...	23	1	...	...	...	6	...	...	...	2	...	1	...	1	22	
	– 25	..	5	94	...	108	90	...	2	...	2	...	29	4	...	...	3	3	1	1	1	3	1	3	...	...	45	
	– 35	...	2	127	..	35	25	...	2	...	...	...	33	4	...	...	2	...	...	...	...	...	...	4	...	...	38	
	– 45	...	4	68	...	7	9	1	..	...	...	...	20	3	...	1	2	...	...	...	...	...	...	2	...	1	20	
	45 +	...	3	1	..	8	6	...	...	...	...	...	39	4	...	1	...	...	...	...	...	...	...	...	...	...	14	
	Total,	...	19	290	...	782	634	1	20	...	8	...	551	31	...	5	8	18	55	5	186	84	1	14	3	6	237	2.
Deaths.																												
Male.	– 1	...	...	...	...	...	3	...	9	...	...	...	49	...	...	...	...	2	4	...	23	...	...	...	...	...	13	
	– 2	...	...	...	...	...	14	...	2	...	...	...	38	1	...	...	...	3	13	...	32	...	...	...	...	...	3	
	– 3	...	1	...	...	2	4	...	2	...	...	...	9	...	...	1	...	3	...	...	9	1	...	...	...	.	1	
	– 4	...	...	...	...	...	4	...	1	...	...	...	3	...	...	...	...	2	...	...	1	...	...	...	...	...	3	
	– 5	...	...	...	...	..	2	...	1	...	...	...	8	...	...	...	...	1	..	...	2	...	...	...	...	...	2	
	– 10	...	...	...	...	2	2	...	...	...	1	...	6	1	...	...	...	4	...	...	...	...	...	...	...	...	2	
	– 15	...	...	...	...	...	..	...	1	...	1	...	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	
	– 25	...	...	...	...	...	1	...	1	...	...	...	10	1	...	...	1	1	...	...	...	...	...	...	...	...	6	
	– 35	...	...	...	...	...	...	...	1	...	...	...	6	2	...	...	...	1	...	...	...	...	...	...	...	...	1	
	– 45	...	1	...	...	...	...	...	...	...	...	...	16	...	...	...	...	...	...	...	...	...	...	...	...	...	1	
	45 +	...	...	...	...	...	...	...	...	...	...	...	47	5	3	...	1	...	...	...	..	...	...	...	...	...	4	
	Total,	...	2	...	...	4	30	...	18	...	2	...	194	10	3	1	2	18	17	...	67	1	...	...	...	...	36	5
Female.	– 1	...	...	...	..	...	4	...	5	...	...	...	38	...	...	...	...	...	1	..	16	1	...	...	...	...	5	
	– 2	...	...	...	...	...	7	...	1	...	...	...	26	1	...	...	...	1	3	...	27	...	...	...	..	...	2	8
	– 3	...	...	...	...	1	2	...	1	..	..	...	10	...	...	...	...	2	2	...	9	...	...	...	...	...	2	9
	– 4	...	..	...	...	1	2	...	...	...	...	...	4	...	...	...	1	3	...	...	1	...	...	...	...	...	...	2
	– 5	...	...	...	...	...	3	...	...	...	...	...	3	...	...	...	...	...	...	...	2	...	...	...	...	...	...	8
	– 10	...	...	...	...	2	13	...	1	...	...	...	3	...	...	...	...	3	...	...	1	...	...	...	...	...	2	5
	– 15	...	...	...	...	1	2	...	2	..	...	...	1	...	...	...	...	6	...	...	...	...	...	...	...	...	2	4
	– 25	...	...	12	...	1	1	...	2	...	...	...	4	...	...	..	...	3	...	...	...	...	..	...	...	...	3	6
	– 35	...	...	27	...	...	..	...	1	...	...	...	8	2	...	...	1	...	...	...	...	...	...	...	...	...	2	1
	– 45	...	1	20	...	...	...	...	...	...	...	...	5	2	...	...	1	...	...	...	...	...	...	...	...	...	3	2
	45 +	...	...	...	...	1	1	...	...	...	...	...	16	1	...	1	...	...	...	...	...	...	...	...	...	...	...	0
	Total,	...	1	59	...	7	35	...	13	...	...	...	118	6	...	1	3	18	6	...	56	1	...	...	...	...	21	5

BELVIDERE HOSPITAL.—TABLE SHOWING ALTERATIONS IN DIAGNOSIS OF CASES DISMISSED AND DEATHS DURING 1928.

Diagnosis Altered to	Originally Certified as																				
	Typhus Fever.	Enteric Fever.	Continued and Undefined Fever.	Puerperal Fever.	Scarlet Fever.	Scarlet Fever and Other Diseases.	Diphtheria.	Diphtheria and Other Diseases.	Cerebro-spinal Fever.	Poliomyelitis.	Pneumonia.	Dysentery.	Measles.	Measles and Other Diseases.	German Measles.	Whooping-Cough.	Whooping-Cough and Other Diseases.	Chickenpox.	Malaria.	Mumps.	Other Diseases.
phus Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
teric Fever,	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...
ntinued and Undefined ever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
erperal Fever and Other iseases,	...	...	...	..	..	...	...	...	...	...	1	...	...	.	...	...	...	...	...	...	...
rlet Fever.	...	...	...	...	...	4	15	...	...	...	2	...	...	.	1	...	...	...	...	..	...
rlet Fever and Other Diseases,	...	...	...	...	7	...	1	...	...	...	...	...	...	..	...	...	...	.	...	...	...
htheria,	...	...	...	...	10	...	...	2	...	...	2	...	...	...	...	1	...	...	...	...	...
ntheria and Other Diseases,	...	...	...	...	...	...	16	...	...	...	..	...	...	...	...	...	...	...	...	...	...
ebro-spinal Fever,	...	1	1	1	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...
sentery,	...	3	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	..	...	...	...
liomyelitis,	...	...	...	...	..	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...
eumonia,	...	4	...	3	6	...	12	...	7	...	4	...	3	...	...	3	...	2	...	...	1
eumonia and Other Diseases,	...	..	...	...	...	...	...	...	5	...	48	1	...	...	...	...	...	...	...	...	...
ysipelas,	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...
erculosis (All Forms),	...	2	1	1	...	...	...	...	25	...	13	...	...	...	...	1	...	...	...	...	...
asles,	...	...	...	...	12	...	5	...	...	...	2	...	..	...	...	...	...	1	...	...	...
asles and Other Diseases,	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...
scola,	...	...	...	...	10	...	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...
hooping-Cough,	...	...	...	...	...	...	...	...	1	...	6	..	...	...	...	...	...	...	...	...	..
umps,	...	...	...	...	1	..	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...
ickenpox and Other Diseases,	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...
luenza,	...	...	1	2	5	...	...	...	1	...	32	...	...	...	...	...	...	...	...	...	...
her Diseases of the Nervous System,	...	..	...	. .	...	...	...	...	3	3	1	...	...	...	.	..	...	...	...	...	...
her Diseases of the Respiratory System,	...	1	...	...	12	...	16	...	2	1	90	...	...	...	...	8	...	1	...	...	...
seases of the Circulatory System,	...	1	...	2	1	...	...	...	3	...	3	...	..	...	...	...	...	...	...	..	...
seases of the Digestive System,	...	8	...	2	11	...	2	...	16	1	20	6	..	...	...	1	...	1	...	...	1
her Accidents and Diseases of Pregnancy and Parturition,	...	...	...	34	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...
seases of the Skin and of the Cellular Tissue,	...	...	1	1	24	1	...	...	...	...	...	..	...	..	...	...	...	10	...	...	2
apparent Disease,	...	...	...	...	5	...	...	...	...	1	1	...	...	. .	...	1	...	1	...	...	1
l Other Diseases,	. .	4	2	7	31	...	42	...	9	5	21	1	...	...	.	...	...	...	1	1	...

RUCHILL FEVER AND TUBERCULOSIS HOSPITAL.

During the year ending December 31st, 1928, there was a considerable fall in the total number of cases treated in the Hospital, the figures being 5,118 compared with 5,383 for the previous year. This fall is largely accounted for by the reduced number of cases of scarlet fever and, to a less extent, by fewer cases of pneumonia being treated to a conclusion by the end of the year. The general mortality rate was practically the same as in 1927 and was still rather high, this level being maintained by the continuance well into the new year of the epidemics of measles and whooping-cough, which had started in 1927.

Enteric fever cases were even fewer than the previous year, only numbering 8, which is the lowest figure so far recorded for the Hospital. Paratyphoid cases also were few, only 6 being treated.

Scarlet fever again showed a large drop in numbers, only 928. or 290 fewer than last year, being recorded. The great majority of cases were of a mild character. The mortality rate was the same as last year, namely, 1·5 per cent. Continued success has attended the use of the anti-scarlatinal serum.

Diphtheria patients were slightly fewer than last year (988 as compared with 994). The cases were on the whole mild, though a few of the severe types were met with. The mortality rate was slightly higher than last year (4·0 per cent. compared with 3·4 per cent.). There was a rather higher incidence of laryngeal infection than usual.

In erysipelas the numbers were increased (485 cases this and 422 last year). The mortality rate was much the same. Further investigations have been made in the serum treatment of this disease with distinctly encouraging results. A series of cases has been treated by injection with the anti-scarlatinal serum on the hypothesis that it, being an anti-streptococcal serum of considerable potency, might have a modifying effect on the streptococcal infection of erysipelas. This supposition has largely been confirmed by results, as in a large proportion of cases there was a very definite modification of the toxæmia symptoms directly after the injection of the serum. In addition to this a further trial was made of some anti-erysipelas streptococcal serum, but in the cases so treated the results were not at all convincing.

In cerebro-spinal fever the cases treated were fewer than last year and consisted as before of sporadic cases and were mostly in young children. The mortality rate continued very high.

The number of cases of encephalitis lethargica admitted was much smaller than last year and they did not present anything of special note.

Acute anterior poliomyelitis became prevalent in the late summer and a marked increase in the number of cases treated in Hospital is recorded. In all 18 cases were treated to a conclusion and several were still in Hospital at the end of the year. The cases varied in severity but none proved fatal. The majority were admitted after the acute symptoms had subsided and presented varying degrees of paralysis. As usual the legs were more often affected than the arms and in many instances both legs suffered. In 3 cases the patients did not suffer from any discoverable paralysis, but the symptoms present indicated some acute disease of the central nervous system which did not conform to any of the other acute diseases usually met with such as cerebro-spinal fever, tubercular meningitis or encephalitis lethargica. These cases were looked upon as poliomyelitis infections which had not gone on to paralysis and were classed as such.

One other case presented some points of considerable interest. This occurred in a girl of two years. She was admitted to hospital as a possible case of diphtheria with some sore throat and pyrexia. The throat condition proved to be non-diphtheritic and settled down quickly. The temperature, however, continued to remain elevated and exhibited some marked swings in its daily curve. The bowels were loose and the stools green and offensive for about ten days and then cleared up satisfactorily. The child continued to appear ill and was very fretful, but nothing definite could be made out to account for her condition. Then on the thirteenth day after admission there suddenly appeared very definite flacid paralysis affecting both legs and the left arm. This condition persisted, but there was now a marked improvement in the general condition. The subsequent course of the case was quite unimportant, improvement in the paralysis taking place until there was only slight disability present in the legs. The interesting feature is the long preparalytic stage without any symptoms which could be referred to the nervous system.

Pneumonia cases were fewer than last year to the extent of 197, but they still represented nearly 20 per cent. of the total cases treated in Hospital. The mortality rate was slightly lower than in the previous year, namely, about 18 per cent. compared with 19 per cent. There was nothing of special note in the types of disease dealt with, and the age distribution of fatal cases conformed to the usual experience. Cases of pneumonia associated with influenza continued few in number.

A number of cases of dysentery occurring in young infants were treated during the year. They were of the bacillary type and were on the whole mild.

The epidemic of measles which had commenced before the end of last year continued well into the new year, and a large number of cases were treated. These included a high proportion of patients who were very ill with respiratory complications, and consequently the mortality rate was high. The use of convalescent serum was continued as prophylactic treatment of contacts in crossed wards with varying results. The experience noted in the former report was repeated—namely, that occasionally complete immunity appeared to be obtained, but more usually the inoculated patients developed the disease in a very much modified form.

Whooping-cough cases were increased in number and the mortality rate remained very high, due to the fact that severe cases were selected for treatment in Hospital.

The Visiting Aural Surgeon continued to do useful work, though the number of cases seen was smaller than last year. In all 359 consultations and examinations were made in 192 new patients and 167 old patients. The conditions dealt with included acute and chronic suppurative diseases of the middle ear, enlarged tonsils with adenoids, mastoid disease, rhinitis, sinusitis, septal and turbinal disease and the persistence of diphtheria bacilli in the throat after an attack of the disease.

Operations numbering 155 were performed, and, of these, 137 were for the removal of tonsils and adenoids. The conditions for which this operation was done were middle ear disease, chronic nasal discharge, diseased tonsils, and persistent positive diphtheria throats. In the great majority of cases the conditions cleared up rapidly after the operation and thereby allowed the patient to be dismissed much sooner. Mastoidectomy was performed on nine cases, and all made good recoveries except one which died subsequently from pneumonia. Other operations included radical antral operation, antral lavage, removal of foreign body from the ear, removal of turbinal bones, &c.

Dr. I. M'Cracken, Tuberculosis Officer, presents the following statement referring to the work of the tuberculosis section of the Hospital.—

"During the year 1928 the number of cases dealt with in the Tuberculosis Section has been considerably smaller than in previous years. The reduction affected chiefly the group of advanced cases, in which group dismissals and deaths numbered 133—over 100 less than in 1927. The number of deaths, however, bears the same ratio to total dismissals as in previous years—approximately 30 per cent.

As a result of the decrease in numbers, the period of residence has been, on the average, slightly longer than in preceding years—six months against four and a half months. This applies specially to the group of intermediate cases, and is reflected in the greater proportion of patients showing improvement.

Type of Case.—Cases in the *early* stage of the disease were few in number. The *intermediate* group embraced chronic cases whose general condition has deteriorated, while the *advanced* cases were—

(1) Young adults with acute broncho-pneumonic tuberculosis;
(2) Chronic cases suffering from an acute exacerbation; or
(3) Chronic cases in advanced stages, with failing resistance.

Complications.—As many of the cases under treatment were advanced, complications were not infrequent. The number of cases in which the most common tuberculous complications occurred were tuberculous enteritis, 28; tuberculous laryngitis, 10; pleural effusion, 8; tuberculous meningitis, 5; spontaneous pneumothorax, 5; urogenital tuberculosis, 3.

Among non-tuberculous complications, bronchitis and myocardial disease figure largely.

Treatment.—As in previous years treatment has been mainly general, consisting of (1) rest; (2) diet; and (3) graduated exercise.

Among special methods of treatment may be mentioned—artificial pneumothorax, 6; aspiration, 4; aspiration and gas replacement, 4; and sanocrysin, 2.

Of the cases treated by artificial pneumothorax only two gave a result sufficiently satisfactory to warrant the continuance of treatment. These cases visit the Hospital periodically for refills. The cases treated by sanocrysin showed no material improvement attributable to this drug.

Dental Treatment.—In a high proportion of patients the state of the teeth leaves much to be desired. Little of a conservative nature would be possible or indeed useful; but something can be done by extracting carious teeth which are a source of chronic infection. Twenty-two patients received dental treatment by the resident medical officers, and the total number of extractions was seventy-four.

Non-Pulmonary Tuberculosis.—More than two-thirds of the cases falling into this group were children suffering from tuberculosis of the abdomen. Most of these showed marked improvement. Of the four deaths two were due to meningeal tuberculosis. Some were treated by special methods, such as artificial heliotherapy, 3; and aspiration and oxgyen replacement, 2. The cases so treated all showed improvement.

Non-Tuberculous Cases.—These numbered 31, as follows:—Bronchiectasis and post-pneumonic conditions, 8; bronchitis, 7; pulmonary or mediastinal tumours, 5; and other conditions, 11.

Recreation, in so far as it is compatible with the state of health of the patients, has been encouraged; games are played in the wards; and during the winter months, by kindness of friends, concerts have been provided for the entertainment of patients."

W. M. ELLIOTT,
Physician-Superintendent.

5th April, 1929.

RUCHILL HOSPITAL—STATEMENT OF CASES TREATED ACCORDING TO SEX.

DATA BASED ON DISMISSALS AND DEATHS FOR YEAR 1928.

Disease.	In Hosp. 1st Jan.		Admitted.		Died.		Dismissed.		Remaining in Hospital at 31st Dec.		Mortality per cent.		Av. Residence (Days).			
													Dismissals.		Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Paratyphoid B.,	...	...	3	4	1	...	2	3	...	1	33·3	...	48	53	17	...
Typhus,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric,	2	1	5	1	1	...	5	2	1	...	16·7	...	73	91	1	...
Continued and Undefined,	...	...	...	3	...	...	...	1	...	2	...	...	...	31	...	...
Puerperal,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever,	55	72	415	545	8	5	394	519	68	93	2·0	1·0	46	44	25	9
Diphtheria and Memb. Croup,	102	108	388	502	24	16	421	527	45	67	5·4	2·9	54	50	7	13
Erysipelas,	16	23	233	252	22	14	209	240	18	21	9·5	5·5	25	22	12	17
Cholera,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-spinal Fever,	...	1	14	16	9	12	4	1	1	4	69·2	92·3	81	128	13	7
Ophthalmia Neonatorum,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trachoma,	...	...	14	14	...	...	10	9	4	5	...	...	26	41	...	...
Lethargica Encephalitis,	5	...	5	4	1	...	4	3	5	1	20·0	...	381	45	13	...
Acute Polioencephalitis,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Poliomyelitis,	1	2	11	11	...	...	10	8	2	5	...	...	51	84	...	...
Acute Primary Pneumonia,	48	29	657	427	103	78	514	319	88	59	16·7	19·6	31	33	12	15
Acute Influenzal-Pneumonia,	...	...	19	7	3	1	12	6	4	...	20·0	14·3	21	22	12	3
Malaria,	...	...	1	...	...	...	1	...	...	...	...	...	20	...	...	...
Dysentery,	2	1	7	8	...	...	7	5	2	4	...	...	44	33	...	..
Relapsing Fever,	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...
Trench Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis,	...	1	13	4	2	1	11	4	...	...	15·4	20·0	29	42	22	106
Other Forms of Tuberculosis,	...	...	11	12	10	10	...	2	1	...	100·0	83·3	...	34	8	9
Measles,	63	67	212	271	37	51	237	284	1	3	13·5	15·2	32	30	16	11
German Measles,	...	...	15	34	...	...	11	24	4	10	...	...	17	15	...	...
Whooping-Cough,	6	17	156	170	43	39	103	134	16	14	29·5	22·5	60	55	16	11
Chickenpox,	...	...	3	1	...	...	2	1	1	...	...	...	30	14	...	...
Influenza,	...	...	10	8	...	...	8	7	2	1	...	...	22	21	...	...
Child with Mother,	...	...	1	3	...	...	1	3	...	...	...	...	17	11	...	...
No Apparent Disease,	1	...	9	5	...	...	10	5	...	...	...	...	14	22	...	...
Impetigo,	...	...	2	1	...	...	2	1	...	...	...	...	57	33	...	...
Mumps,	...	...	...	5	...	...	...	5	...	...	...	...	...	26	...	...
Others,	23	16	282	262	31	20	251	233	23	25	11·0	7·9	29	28	11	16
Unclassified,	...	...	...	1	...	...	...	1	...	...	...	...	...	1	...	...
											11·7	9·5	39	38	13	13

RUCHILL HOSPITAL.—STATEMENT SHOWING AGE AND SEX DISTRIBUTION OF CASES DISMISSED, AND DEATHS DURING THE YEAR 1928.

including Deaths).

Age.	Paratyphoid B.	Continued and Undefined Fever.	Enteric.	Trachoma.	Smallpox.	Scarlet Fever.	Diph. and Memb. Croup.	Erysipelas.	Cerebro-spinal Fever.	Lethargica Encephalitis.	Acute Poliomyelitis.	Acute Primary Pneumonia.	Acute Influenzal-Pneumonia.	Malaria.	Dysentery.	Pulmonary Tuberculosis.	Other Forms of Tuberculosis.	Measles.	German Measles.	Whooping-Cough.	Chickenpox.	Influenza.	Child with Mother.	No Apparent Disease.	Impetigo.	Mumps.	Unclassified.	Others.	Total.
1	1	...	...	...	...	1	15	4	7	...	...	71	...	...	...	1	2	52	...	39	1	...	1	...	...	...	...	51	246
2	...	...	...	...	...	14	33	2	1	1	7	96	...	...	1	...	3	77	...	42	...	...	...	2	1	...	...	41	321
3	...	...	...	...	...	18	41	2	2	...	1	37	...	...	...	...	2	48	3	25	1	...	...	...	...	...	...	23	203
4	...	...	...	...	...	33	44	3	...	...	1	37	1	...	...	...	...	34	...	16	...	...	...	3	...	...	...	15	187
5	...	...	...	...	...	46	42	2	...	...	..	29	...	...	2	...	...	20	2	11	...	...	...	...	...	...	...	15	169
10	1	...	...	1	...	166	161	4	1	...	...	76	2	..	1	1	2	23	6	13	...	1	...	2	...	...	...	42	503
15	...	...	...	6	...	63	53	4	1	1	...	39	1	...	...	3	1	3	...	...	...	...	...	...	1	...	...	8	184
25	...	...	3	...	...	45	34	23	...	3	1	81	5	...	...	4	...	10	...	...	...	4	...	3	...	...	...	23	239
35	1	...	2	2	...	13	17	29	1	...	...	54	2	1	3	1	...	6	...	...	...	2	...	...	...	...	...	17	151
45	...	...	1	1	...	3	4	35	...	...	...	53	3	...	...	3	...	...	...	...	...	...	...	...	...	...	...	16	119
5 +	...	...	...	...	...	...	1	123	...	...	...	44	1	...	...	...	...	1	...	...	...	1	...	...	...	...	...	31	202
tal,	3	...	6	10	...	402	445	231	13	5	10	617	15	1	7	13	10	274	11	146	2	8	1	10	2	...	...	282	2,524
1	...	...	...	...	...	1	7	3	3	...	...	47	...	...	...	1	1	43	1	31	...	...	3	...	...	...	...	44	185
2	1	...	...	...	...	6	20	4	2	...	2	73	...	...	1	...	...	86	3	51	...	...	...	2	...	...	...	36	287
3	...	...	...	...	...	19	35	5	3	..	4	51	...	...	...	...	2	58	2	38	1	...	...	1	1	...	...	19	239
4	...	...	...	...	...	27	37	5	...	1	1	28	...	...	1	...	1	41	1	19	...	1	...	...	...	...	...	21	184
5	...	...	...	...	...	43	41	1	1	...	...	18	...	...	...	...	...	21	1	8	...	...	...	...	...	...	...	8	142
10	...	...	1	1	...	218	202	7	...	...	1	58	1	...	2	...	4	29	9	26	...	...	...	1	...	2	...	33	595
15	...	...	...	1	...	95	72	10	1	...	...	21	...	...	...	1	2	1	2	...	...	...	...	...	...	...	...	12	218
25	2	1	...	4	...	79	82	40	2	..	...	25	2	...	...	2	2	32	4	...	...	2	...	...	...	2	1	28	310
35	...	...	...	1	...	24	30	34	1	1	...	28	...	...	...	...	...	20	1	...	...	1	...	...	...	1	...	25	167
45	...	...	...	2	...	7	13	36	...	1	...	21	1	...	...	1	...	2	...	...	...	2	...	1	...	...	...	10	97
+	...	...	1	...	...	5	4	109	...	...	...	27	3	...	1	...	...	2	...	...	...	1	...	...	...	...	...	17	170
tal,	3	1	2	9	...	524	543	254	13	3	8	397	7	...	5	5	12	335	24	173	1	7	3	5	1	5	1	253	2,594
1	...	...	...	...	...	...	5	1	7	...	...	20	...	...	...	...	2	9	...	19	...	...	...	...	...	...	..	6	69
2	...	...	...	...	...	5	5	...	1	...	...	19	...	...	...	...	3	20	...	12	...	...	...	...	..	...	...	5	70
3	...	...	...	...	...	1	6	...	1	...	...	6	...	...	...	...	2	1	...	7	...	...	...	...	...	...	...	2	26
4	...	...	...	...	...	1	1	...	...	...	...	3	1	...	...	...	...	4	...	3	...	.	...	...	...	...	...	1	14
5	...	...	...	...	...	1	...	...	...	...	...	3	...	...	...	...	...	2	...	1	...	...	...	...	...	...	..	1	8
10	1	...	...	...	...	...	3	...	...	...	...	1	...	...	...	...	2	...	...	1	...	...	...	...	...	...	...	4	12
15	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	1	1	...	...	...	...	...	...	...	...	...	...	5
25	...	...	...	...	...	...	1	...	...	1	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	10
35	...	...	1	...	...	...	1	2	...	...	...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	15
45	...	...	...	...	...	...	1	2	...	...	...	20	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	29
+	...	..	...	...	...	...	1	17	...	...	...	14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	37
al,	1	...	1	...	...	8	24	22	9	1	...	103	3	...	...	2	10	37	...	43	...	...	...	...	...	...	...	31	295
1	...	...	...	...	...	...	1	1	3	...	...	17	...	...	...	1	1	12	...	13	...	...	...	...	...	...	...	5	54
2	...	...	...	...	...	...	3	...	2	...	...	20	...	...	...	...	...	20	...	15	...	...	...	...	...	...	...	1	61
3	...	...	...	...	...	...	2	...	2	...	...	8	...	...	...	...	2	10	...	10	...	...	...	...	...	...	...	1	35
4	...	...	...	...	...	1	1	...	...	...	...	5	...	...	...	...	1	4	...	1	...	...	...	...	...	...	...	1	14
5	...	...	...	...	..	...	4	...	1	...	...	1	...	...	...	...	...	2	...	...	...	...	...	..	...	...	...	1	9
10	...	...	...	...	...	2	4	1	...	...	...	2	...	...	...	...	3	3	...	...	...	...	...	...	...	...	...	2	17
15	...	...	...	...	...	1	1	...	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	6
25	...	...	...	...	...	...	..	...	2	...	..	4	...	...	...	...	2	...	...	..	...	...	...	...	...	...	...	2	10
35	...	...	...	...	...	1	...	2	1	..	...	3	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	8
45	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	1	7
+	...	...	...	...	...	...	..:	10	...	...	...	11	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	26
al,	...	...	...	...	...	5	16	14	12	...	...	78	1	...	...	1	10	51	...	39	...	...	...	...	...	...	...	20	247

RUCHILL HOSPITAL.—Table showing Alterations in Diagnosis of Cases Dismissed and Deaths during 1928.

Diagnosis Altered to	Originally Certified as Enteric Fever	Continued and Undefined Fever	Scarlet Fever	Diphtheria	Erysipelas	Cerebro-spinal Fever	Lethargica Encephalitis	Acute Primary Pneumonia	Acute Influenzal-Pneumonia	Dysentery	Measles	Roseola	Whooping-Cough	Other Affections	Paratyphoid
Enteric Fever,	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Paratyphoid Fever,	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever,	...	...	...	10	...	...	...	4	...	...	1	...	...	...	...
Diphtheria,	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...
Cerebro-spinal Fever,	...	...	...	...	...	...	2	2	...	...	1	...	...	...	...
Lethargica Encephalitis,	...	...	...	...	...	1	...	...	...	...	...	...	...	...	..
Acute Primary Pneumonia,	3	...	3	10	1	10	1	...	35	...	1	...	2	...	...
Tuberculosis (all forms),	2	3	...	...	...	19	6	15	2	...	...	...	...	1	...
Measles,	...	1	8	8	...	...	...	17	1	...	...	2	...	...	...
Roseola,	...	...	6	...	...	...	...	1	...	...	14	...	...	...	...
Whooping-Cough,	...	...	...	3	...	...	...	9	1	...	...	...	...	...	1
Chickenpox,	...	...	...	...	...	...	....	1	...	...	...	...	...	...	...
Influenza and Influenza associated with other Diseases,	2	...	1	1	...	...	...	9	2	...	...	...	...	1	...
Other Diseases of the Nervous System,	...	...	...	...	...	6	9	...	...	...	...	...	...	...	...
Other Diseases of the Respiratory System,	...	1	3	11	2	1	...	205	7	1	..	...	3	1	...
Diseases of the Circulatory System,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of the Digestive System,	5	...	23	51	1	10	3	28	1	3	5	...	1	2	...
Diseases of the Skin and of the Cellular Tissue,	...	...	21	...	36	...	...	2	...	...	2	..	...	1	...
No Apparent Disease,	...	...	8	1	...	...	...	6	...	...	...	...	...	...	...
All other Diseases,	...	3	8	...	13	6	...	18	2	3	1	...	1	1	...
Erysipelas,	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...

RUCHILL HOSPITAL.—TUBERCULOSIS, TABLE SHOWING CASES DISMISSED AND DEATHS DURING THE YEAR 1928, AND THE AVERAGE RESIDENCE.

Disease.	Number of Cases Dismissed	Number of Deaths.	Average Residence.							Average days.
			-30	-50	-100	-150 Days.	-200	-300	+300	
Pulmonary Tuberculosis—										
Early, - - - - -	50	1	7	2	9	9	11	6	7	166
Intermediate, - - -	172	18	19	7	47	21	30	35	31	180
Advanced, - - -	109	124	61	24	49	23	16	29	31	146
Doubtful Cases, - -	4	...	...	...	2	..	...	2	...	175
Diagnosis not Confirmed, -	21	5	3	4	3	4	3	3	6	185
Other Forms of Tuberculosis—										
Glands, - - - - -	4	...	...	...	1	...	...	3	...	219
Spine, - - - - -	...	...	...	...	...	...	...	...	...	...
Bones other than Spine, -	1	...	...	...	...	...	1	...	...	164
Hip Joint, - - - -	...	...	...	...	...	...	...	...	...	...
Joints other than Hip, -	1	...	...	...	...	...	...	...	1	661
Abdomen, - - - -	18	4	1	1	1	2	2	6	9	350
Multiple, - - - -	...	3	...	2	1	...	...	...	...	51
Genito-Urinary, - -	...	...	...	...	...	...	...	...	...	...
Miscellaneous, - - -	2	1	1	...	...	1	...	...	1	950
Diagnosis not confirmed, -	1	4	2	2	...	...	1	...	...	65
Total, - - -	383	160	94	42	113	60	64	84	86	175

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RUCHILL HOSPITAL.—Pulmonary Tuberculosis.—Showing Stage of Disease, Age, Result of Treatment, &c., of Patients Dismissed during 1928.

Ages.	Not Classified Further.				Result of Treatment.										Complications.				Condition on or Reason for Dismissal.										Result of Sputum Examination.																	
	Less than 4 Weeks' Residence.		Deaths Among these.		Much Improved.		Improved.		Not Improved.		Died.		Total.		Tubercular.		Other.		Fit for Work or School.		Unfit.		Left Own Accord or Removed by Parents.		Other Reasons.		Transferred to Other Institutions.		+ Admitted. + Dismissed.		+ Admitted. - Dismissed.		- Admitted. + Dismissed.		- Admitted. - Dismissed.		No Sputum.		+ Admitted. N. S. Dismissed.		N. S. Admitted. + Dismissed.		- Admitted. N.S. Dismissed.		N.S. Admitted. - Dismissed.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Early Cases—																																														
– 5,	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
– 10,	...	...	...	...	4	3	...	...	...	...	...	...	4	3	1	1	...	...	2	3	...	...	1	...	1	...	...	...	...	...	1	...	...	...	...	...	3	3	...	...	...	...	...	...	...	...
– 15,	1	...	...	...	3	3	1	1	...	...	...	...	4	4	...	...	1	...	2	2	...	...	1	1	1	...	...	1	...	...	...	1	...	1	1	2	3	...	...	...	...	...	...	...	...	...
– 25,	...	...	...	...	3	3	4	4	1	...	...	...	8	7	...	...	...	...	1	1	...	1	2	2	2	2	3	1	3	3	...	...	1	...	3	3	1	...	...	1	...	...	...	...	...	...
– 35,	1	1	...	...	1	5	...	...	...	...	...	...	1	5	...	...	...	...	...	2	...	1	1	2	...	...	...	...	...	2	1	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...
– 45,	1	1	...	...	3	1	...	1	...	1	1	...	4	3	...	...	2	...	2	1	...	...	1	...	...	1	...	1	...	2	1	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...
45 +,	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Total,	3	4	...	...	15	15	5	6	1	1	1	...	22	22	1	1	3	...	8	9	...	2	6	5	4	3	3	3	3	7	3	2	1	1	8	6	7	5	...	1	...	...	...	...	...	...
Intermediate Cases—																																														
– 5,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
– 10,	...	...	...	...	...	1	2	1	...	...	1	...	3	2	1	...	1	...	...	1	...	...	1	1	1	...	...	...	...	...	1	...	...	...	1	...	1	2	...	...	...	...	...	...	...	...
– 15,	1	...	...	...	...	1	...	1	...	...	...	1	...	3	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
– 25,	4	1	1	...	14	18	8	12	3	1	5	...	30	31	3	2	...	2	4	1	1	4	11	13	5	2	5	10	16	23	4	...	1	1	3	2	7	3	...	1	...	...	...	...	...	...
– 35,	3	6	...	1	7	8	9	8	1	1	3	...	20	17	1	2	4	3	6	3	...	1	10	7	1	4	...	2	10	4	3	1	1	2	6	5	...	3	...	2	...	...	...	...	...	...
– 45,	1	...	...	...	7	2	8	7	1	...	2	2	18	11	2	1	1	...	5	1	8	6	2	1	1	1	...	...	10	7	1	2	...	...	6	...	1	1	...	1	...	...	...	...	...	...
45 +,	2	1	...	...	12	4	16	1	1	...	2	...	31	5	2	...	3	1	7	1	2	...	18	2	1	2	1	...	11	1	6	...	2	1	12	2	1	...	...	...	...	...	...	...	...	...
Total,	11	8	1	1	40	34	43	30	6	2	13	3	102	69	9	5	9	6	22	7	11	13	42	24	9	9	6	12	47	37	15	4	4	4	28	9	10	9	...	4	...	...	...	...	...	...
Advanced Cases—																																														
– 5,	1	...	1	...	1	...	...	...	...	...	1	...	2	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
– 10,	1	...	1	...	1	...	2	1	...	1	...	1	3	3	1	...	...	...	1	1	1	...	...	1	...	...	1	...	...	...	...	1	...	...	1	1	1	1	1	...	...	...	...	...	...	...
– 15,	1	1	1	1	...	...	...	1	...	3	...	2	...	6	...	2	...	...	...	...	...	...	...	4	...	...	...	...	...	4	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...
– 25,	12	8	8	6	5	4	2	2	5	7	10	12	22	25	6	8	...	2	3	2	1	1	7	9	1	1	...	...	16	17	...	1	1	1	5	3	...	1	...	2	...	...	...	...	...	...
– 35,	6	5	6	3	3	...	5	6	7	5	10	10	25	21	7	2	2	1	1	...	1	...	9	10	2	1	2	...	20	19	2	1	...	...	3	2	...	...	...	...	...	...	...	...	...	...
– 45,	7	4	6	1	3	2	5	1	2	2	8	12	18	17	4	5	...	1	...	2	1	...	7	3	2	...	...	...	10	15	2	1	1	...	3	...	2	...	...	1	...	...	...	...	...	...
45 +,	7	4	6	4	3	...	7	5	2	3	6	8	18	16	3	5	3	1	2	...	2	...	5	6	3	2	...	...	10	10	2	1	2	...	4	3	...	...	...	1	...	...	...	...	...	...
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	35	45	88	88	22	22	5	5	7	5	6	1	29	33	8	4	3	...	56	65	6	5	4	2	17	9	4	2	1	5	...	...	...	...	...	...

KNIGHTSWOOD FEVER AND TUBERCULOSIS HOSPITAL.

The number of patients dismissed, including those who died during the year 1928, was 1,681, as against 1,822 for the previous year. All the wards were used for the treatment of fevers except two pavilions accommodating 80 patients with advanced phthisis.

The number of fever patients discharged from hospital was 1,315, while 167 died, making a total of 1,482 patients. The mortality rate was 11·2 per cent., as against 10·6 for the previous year. This mortality rate was a little greater than in the year 1927, and was due to the fact that more than half of the total number of cases dismissed, including deaths, were cases of acute primary pneumonia and measles, the mortality among which was 15·4 per cent. and 20·8 per cent. respectively.

Scarlet Fever.—A much smaller number of patients was treated, 360 as against 524 for the previous year. The type of case admitted was mild in character, the mortality rate being only ·5 per cent., as against 1·1 per cent. in the preceding year. Details of the total number of patients treated are classified according to number of patients, chief complications, and deaths in the following table :—

Table I.

Number of Patients.	No. of Chief Complications.					No. of Deaths.	Case Mortality per cent.
	Acute Nephritis.	Rheumatism.	Mastoid Diseases.	Otorrhœa.	Ludwig's Angina.		
360	3	12	3	31	1	2	0·5

It will be observed from the above table that complications were few in number, otorrhœa as in former years being the most common. The aurist visited weekly all patients suffering from otitis media, and it was found necessary to remove the tonsils and adenoids of nine of these patients in order to hasten the drying up of the discharge.

The new concentrated antitoxin for scarlet fever was administered to 65 acutely ill patients as a rule not later than the third day of their illness, and in 20 of these patients complications occurred. Details of the serum-treated cases are classified according to number of cases, chief complications, and deaths in the following table :—

Table II.

No. of Cases treated with Scarlet Fever Antitoxin.	No. of Chief Complications.					No. of Deaths.	Case Mortality per cent.
	Acute Nephritis.	Rheumatism.	Mastoid Disease.	Otorrhœa.	Ludwig's Angina		
65	1	5	1	2	1	2	3·07

In comparing Tables I and II it will be observed that rather a large proportion of the total complications of acute nephritis, rheumatism, and mastoid disease occurred in serum-treated cases, but the frequency of the complication of otorrhœa was very much less in these latter cases. The two patients who died were treated with scarlet fever antitoxin; the cause of death in the one patient being toxic scarlet fever, and in the other patient Ludwig's angina. As has been noted during the past two years the antitoxin cut short the primary pyrexial period, it rapidly improved the physical well-being of the patient and it diminished the amount of the desquamation, but it could not be said from the above series of cases that the administration of the serum prevented the onset of complications, nor did it appear to have any beneficial effect on the only toxic case admitted which died. The serum was, however, found very useful as formerly in producing passive immunity among the Dick positives in diphtheria wards, which had been crossed with scarlet fever, with the obvious advantage that the wards did not require to be put in quarantine and beds otherwise not available were able to be utilised.

Twenty-one of the junior nursing staff were subjected to the Dick test, and there were seven positive reactors, all of whom were actively immunised. One nurse who was very strongly Dick positive developed scarlet fever of a very mild type eight months after she was actively immunised. This is rather interesting as it demonstrates that scarlet fever may develop even after active immunisation, but as this nurse was very strongly Dick positive, it may be concluded that if she had not been immunised the attack of scarlet fever, instead of being very mild as in this case, might have been severe. This method was of great value in administration, as all the negative reactors could be safely sent to nurse the patients in scarlet fever wards. None of the negative reactors during the past two years has developed the disease during their period of training.

Diphtheria.—The number of patients discharged from hospital was 205, and two died, making a total of 207 patients. Details of the total number of patients treated are classified according to number of cases, chief complications, and deaths in Table III.

TABLE III.

Total No. of cases Dismissed.	No. of Chief Complications.				No. of Deaths.	Case Mortality per cent.
	Cardiac Paralysis.	Palatal Paralysis.	Pharyngeal Paralysis.	Paralysis of Intercostal Muscles.		
207	2	4	1	1	2	·9

The cases were again of a mild type, the complications were few, the mortality being only ·9 per cent., as against 1·5 per cent. in the previous year. The aurist enucleated the tonsils and removed the adenoids from 23 patients who were found to be carriers, and in a very short time after the operation these patients were able to be dismissed. The Schick test was performed on 24 nurses, eight of whom were found to give a positive reaction and were later immunised with toxin-antitoxin mixture. The method was of great value in administration, as all the negative reactors could be safely sent to act as nurses in diphtheria wards. None of the negative reactors and none of those actively immunised during the past two years have since developed the disease.

Measles.—The number of cases treated was 350. Measles was the disease which, through its complications, was the most fatal of the infections. The fatality rate, 20·8 per cent., was for the most part due to pneumonia alone or combined with enteritis. One third of the total number of cases were found also to be suffering from pneumonia, and the mortality rate for this group was 49·1 per cent., which shows what a fatal complication pneumonia is in children suffering from measles.

Whooping-cough.—The number of patients discharged from hospital was 91, and 20 died, making a total of 111 patients. Both the prophylactic and the curative vaccines for this disease were used with what appeared to be beneficial results. The majority of the deaths were due to pneumonia, either alone or combined with enteritis.

Pneumonia.—The number of patients treated totalled 396, and of these 285 were cases of broncho-pneumonia, 97 were cases of lobar pneumonia, and 14 were found to be suffering from influenzal pneumonia. The mortality rate for the whole group was 15·4 per cent., which was a little less than in the previous year, when the mortality was 16·6 per cent. The death-rate for the cases of broncho-pneumonia was also 15·4 per cent., and in a little less than half of the latter percentage of cases, enteritis, as in former years, was a serious complication.

Pulmonary Tuberculosis.—During the past year 129 phthisis cases were discharged from hospital, and 70 died, making a total of 199 patients. The hospital was mainly used for the treatment and isolation of the more advanced types of cases. As an illustration of this no less than 65 per cent. of these cases were in an advanced stage of the disease on admission to hospital. The following table shows the medical classification into which these patients were grouped when admitted :—

Stage of Disease.	Number of Cases.	Number of Deaths in each group.
Early, - - - -	6	...
Intermediate, - - -	63	6
Advanced, - - -	130	64
Total, - - -	199	70

Details of each of these groups are shown in the appended table, the salient points of which may be summarised as follows :—

Stage of Disease.	Arrested.	Much improved.	Improved.	Not improved.	Died.	Total
Early cases -	...	1	4	...	...	5
Intermediate cases,	...	12	34	5	2	53
Advanced cases, -	...	9	34	16	46	105
Total, - -	...	22	72	21	48	163

Note :—The above table excludes 14 patients whose duration of stay was less than 4 weeks, and 22 patients who died within a month of admission.

Apart from careful nursing and attention to the general health no special form of treatment was adopted as the majority were in a very advanced stage of the disease.

The health of the hospital staff has been good, no illness of a very serious nature having occurred.

WILLIAM DOW,
Physician-Superintendent.

March, 1929.

Data based on Dismissals and Deaths for Year 1928.

Disease.	In Hospital 1st Jan.		Admitted.		Dismissed.		Died.		Remaining in Hospital. 31st Dec., 1928.		Mortality per cent.		Av. Residence (Days).			
													Dismissals.		Deaths.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Typhus,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric,	...	...	2	...	2	...	...	...	...	...	...	...	31	...	...	...
Contd. Fever,	...	...	1	1	...	...	1	...	...	1	100·0	...	...	...	11	...
Puerperal,	...	...	...	...	..	...	...	...	...	..	...	...	...	...	...	...
Smallpox,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever,	34	24	131	196	154	204	...	2	11	14	...	1·0	42	43	...	8
Diphtheria and Memb. Croup,	7	16	108	120	89	116	1	2	25	18	1.1	1·7	45	42	16	6
Erysipelas,	...	...	...	1	...	1	...	...	...	...	...	...	...	18	...	...
Cholera,	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
Cerebro-spinal Fever,	...	...	4	1	3	1	1	...	...	...	25.0	...	32	49	11	...
Ophthalmia Neonatorum,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trachoma,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Encephalitis,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Polioencephalitis,	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...
Acute Poliomyelitis,	...	...	1	...	1	...	...	...	...	...	...	...	64	...	...	...
Acute Primary Pneumonia,	6	8	274	158	199	126	42	15	39	25	17·4	10·6	32	32	11	11
Acute Influenzal-Pneumonia,	...	...	19	2	9	1	3	1	7	...	25·0	50·0	35	8	11	5
Malaria,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Relapsing Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trench Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles,	57	61	122	112	136	141	43	30	...	2	24·0	17·5	34	30	15	25
German Measles,	...	...	...	5	...	5	...		...	...	...	...	...	25	...	...
Whooping-Cough,	...	1	53	57	43	48	10	10	...	...	18·9	17·2	61	73	13	12
Chickenpox,	...	...	1	3	1	3	...	...	...	...	...	...	15	33	...	...
Mumps,	...	...	1	7	1	7	...	...	...	...	...	...	43	19	...	...
Child with Mother,	...	...	1	...	...	...	1	...	...	...	100·0	...	...	...	1	...
Tuberculosis,	...	...	1	2	..	1	1	1	...	...	100·0	50·0	...	31	19	14
No Apparent Disease,	...	...	4	1	4	1	...	...	...	...	...	...	25	35	...	...
Influenza,	...	...	...	1	...	1	...	...	...	...	...	...	...	6	...	...
Unclassified,	...	1	...	8	...	9	...	...	...	...	...	...	...	16	...	...
Others,	...	...	3	8	2	6	1	2	...	...	33·3	25·0	32	9	2	4
Totals,	104	111	726	683	644	671	104	63	82	60	13·9	8·6	38·5	39·0	13·3	17·4
Phthisis	40	...	238	...	129	...	70	...	79	...	...	...	...	...	...	...

KNIGHTSWOOD HOSPITAL.—Statement showing Age and Sex Distributio of Cases Dismissed, and Deaths during the Year 1928.

	Age.	Contd. Fever.	Typhus.	Enteric.	Puerperal.	Smallpox.	Scarlet Fever.	Diph. and Memb. Croup.	Erysipelas.	Cerebro-spinal Fever.	Lethargica Encephalitis.	Acute Poliomyelitis.	Acute Primary Pneumonia.	Acute Influenzal Pneumonia.	Influenza.	Dysentery.	Pulmonary Tuberculosis.	Other Forms of Tub.	Measles.	German Measles.	Whooping-Cough.	Chickenpox.	Child with Mother.	No Apparent Disease.	Mumps.	Unclassified.	Others.
Cases (including Deaths).																											
Male.	– 1	...	...	...	...	...	1	3	..	...	...	...	34	...	...	...	...	...	28	...	11	...	1	...	...	...	2
	– 2	...	...	...	...	...	3	6	...	1	...	..	40	...	...	...	..	...	59	...	11	...	...	1	...	...	...
	– 3	...	...	...	...	...	6	6	...	...	...	1	23	...	...	...	...	...	26	...	8	...	...	..	1	...	...
	– 4	...	...	...	...	...	12	7	...	...	...	...	12	...	...	...	...	...	22	...	9	...	...	...	...	...	..
	– 5	..	...	...	...	...	12	9	...	1	...	...	14	1	...	...	...	...	13	...	9	1	...	...	...	...	...
	– 10	...	...	1	...	...	51	34	...	...	...	...	36	2	...	...	...	...	23	...	5	...	...	...	...	...	...
	– 15	...	...	...	...	...	24	10	...	...	...	...	11	...	...	...	...	...	2	...	...	...	...	1	...	...	...
	– 25	...	...	...	...	...	27	9	...	2	...	...	26	1	...	...	...	...	6	...	...	...	...	1	...	...	1
	– 35	...	...	1	...	...	13	6	...	...	...	...	20	...	...	...	...	...	...	...	...	...	...	1	...	...	...
	– 45	...	...	...	...	...	4	...	...	..	...	...	4	1	...	...	...	1	...	...	...	...	...	...	...	...	...
	45 +	1	..	...	...	...	1	...	...	...	...	...	21	7	...	...	...	...	...	...	...	...	...	...	...	..	...
	Total,	1	...	2	...	...	154	90	...	4	...	1	241	12	...	...	...	1	179	...	53	1	1	4	1	...	3
Female.	– 1	...	...	...	...	...	3	2	...	1	...	...	31	...	...	...	...	...	27	...	9	...	...	...	...	...	...
	– 2	...	...	...	...	...	...	7	...	...	...	...	33	...	...	...	...	1	46	1	17	2	...	...	...	...	...
	– 3	...	...	...	...	...	9	4	...	...	...	...	20	...	...	...	...	...	29	...	5	...	...	...	...	...	...
	– 4	...	...	...	...	...	14	3	...	...	...	...	14	...	...	...	...	...	18	...	13	...	..	1	...	...	...
	– 5	...	...	...	...	...	19	13	...	...	...	...	3	...	...	...	...	...	16	...	4	...	...	...	...	...	...
	– 10	...	...	...	...	...	83	40	...	...	...	...	16	...	...	...	..	...	18	1	9	1	...	...	...	...	1
	– 15	...	...	...	...	...	26	16	...	...	...	...	5	...	...	...	...	...	1	1	...	...	...	...	...	...	...
	– 25	...	...	...	...	...	32	19	...	...	...	...	2	...	1	...	...	...	11	1	1	...	...	...	5	8	4
	– 35	...	...	...	...	...	16	10	...	...	...	...	9	..	...	...	1	...	5	1	...	...	...	...	2	1	2
	– 45	...	...	...	..	...	2	2	...	...	...	...	3	2	...	...	...	...	...	...	...	...	..	...	...	...	1
	45 +	...	...	...	...	...	2	2	1	...	...	...	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total,	...	...	...	...	...	206	118	1	1	...	...	141	2	1	..	1	1	171	5	58	3	...	1	7	9	8
Deaths.																											
Male.	– 1	...	...	...	...	...	...	1	...	...	...	...	10	..	...	...	...	...	12	...	5	...	1	...	...	...	...
	– 2	...	...	...	...	...	...	...	...	...	...	...	10	...	...	...	...	...	20	...	1	...	...	...	...	...	...
	– 3	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	9	...	3	...	...	...	...	...	...
	– 4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...
	– 5	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...
	– 10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
	– 15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	– 25	...	...	...	...	...	...	...	...	1	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	1
	– 35	...	...	...	...	...	..	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	– 45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
	45 +	1	...	...	...	...	...	...	...	...	...	...	10	3	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total,	1	...	...	...	...	...	1	...	1	...	...	42	3	...	...	...	1	43	...	10	...	1	...	...	...	1
Female.	– 1	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	...	11	...	3	...	...	...	...	...	...
	– 2	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	1	14	...	4	...	...	...	...	...	...
	– 3	...	...	...	...	...	1	1	...	...	...	...	2	...	...	...	..	...	4	...	1	...	...	...	...	...	...
	– 4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	..	...	...
	– 5	...	...	...	...	...	...	1	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
	– 10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
	– 15	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	– 25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	– 35	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
	– 45	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1
	45 +	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Total.	...	...	...	...	...	2	2	...	...	...	...	15	1	...	...	...	1	30	...	10	...	...	...	...	...	2

KNIGHTSWOOD HOSPITAL.—Table showing Alterations in Diagnosis of Cases and Deaths during 1928.

Diagnosis Altered to	Originally Certified as													
	Enteric Fever	Continued and Undefined Fever	Scarlet Fever	Diphtheria	Erysipelas	Cerebro-spinal Fever	Lethargica Encephalitis	Acute Primary Pneumonia	Acute Influenzal Pneumonia	Dysentery	Measles	Roseola	Whooping-Cough	Other Affections
Enteric Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Paratyphoid Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria,	...	...	.	...	...	...	...	...	...	...	...	...	...	
Cerebro-spinal Fever,	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Lethargica Encephalitis,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Primary Pneumonia,	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis (all forms),	...	...	...	1	...	1	...	1	...	...	...	...	...	...
Measles,	...	...	3	...	...	...	...	1	...	...	...	...	...	...
Roseola,	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Whooping-Cough,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chickenpox,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza and Influenza associated with other Diseases,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of the Nervous System,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Diseases of the Respiratory System,	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Diseases of the Circulatory System,	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diseases of the Digestive System,	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Diseases of the Skin and of the Cellular Tissue,	...	...	2	1	...	...	...	...	...	...	...	...	...	...
No Apparent Disease,	2	...	4	...	...	1	...	1	...	...	1	...	...	3
All other Diseases,	...	...	2	2	...	1	...	1	...	...	...	...	...	1

KNIGHTSWOOD HOSPITAL.—Pulmonary Tuberculosis.—Table showing Cases Dismissed and Deaths during the Year 1928, and the Average Residence.

	Number of Cases Dismissed.	Number of Deaths.	Average Residence.						
			– 30	– 50	– 100	– 150 days.	– 200	– 300	+ 300
Pulmonary Cases—									
Early,	6	...	1	3	1	1	...	...	...
Intermediate,	57	6	10	18	24	5	3	2	1
Advanced,	66	64	43	31	28	18	7	3	...
Total,	129	70	54	52	53	24	10	5	1

199

TREATMENT, &C., OF PATIENTS DISMISSED DURING 1928.

Ages	Not Classified further.				Result of Treatment.										Complications.				Condition on or Reason for Dismissal.										Result of Sputum Examinations.									
	Less than 4 Weeks' residence.		Deaths among these		Much Improved.		Improved.		Not Improved.		Died.		Total.		Tubercular.		Other.		Fit for Work or School.		Unfit.		Left Own Accord or removed by Parents.		Other Reasons.		Transferred to other Institutions.		+Admitted. +Dismissed.		+Admitted. −Dismissed.		−Admitted. +Dismissed.		−Admitted. −Dismissed.		No Sputum.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Early Cases—																																						
− 5,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 10,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 15,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 25,	1	...	...	...	1	...	1	...	...	...	...	...	2	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...
− 35,	...	...	...	...	...	...	2	...	...	...	...	...	2	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...
− 45,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45 +,	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Total,	1	...	...	...	1	...	4	...	...	...	...	...	5	...	...	...	...	...	4	...	1	...	...	...	...	...	...	...	4	...	...	...	...	...	1	...	...	...
Intermediate Cases—																																						
− 5,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 10,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 15,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 25,	1	...	1	...	3	...	5	...	1	...	1	...	10	...	...	...	...	...	6	...	3	...	...	...	...	...	...	...	7	...	...	...	...	...	3	...	...	...
− 35,	5	...	2	...	1	...	6	...	2	...	1	...	10	...	...	...	...	...	5	...	4	...	...	...	...	...	...	...	8	...	...	...	...	...	2	...	...	...
− 45,	2	...	1	...	6	...	10	...	2	...	...	...	18	...	...	...	...	...	12	...	6	...	...	...	...	...	...	...	14	...	...	...	...	...	4	...	...	...
45 +,	2	...	...	...	2	...	13	...	...	...	...	...	15	...	...	...	...	...	11	...	4	...	...	...	...	...	...	...	8	...	...	...	...	...	7	...	...	...
Total,	10	...	4	...	12	...	34	...	5	...	2	...	53	...	...	...	...	...	34	...	17	...	...	...	...	...	...	...	37	...	...	...	...	...	16	...	...	...
Advanced Cases—																																						
− 5,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 10,	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
− 15,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 25,	6	...	4	...	...	...	7	...	3	...	12	...	22	...	...	...	...	...	2	...	8	...	...	...	...	...	...	...	20	...	...	...	...	...	2	...	...	...
− 35,	7	...	5	...	3	...	6	...	6	...	11	...	26	...	...	...	...	...	5	...	10	...	...	...	...	...	...	...	23	...	...	...	...	...	3	...	...	...
− 45,	3	...	2	...	3	...	10	...	1	...	12	...	26	...	...	...	...	...	3	...	11	...	...	...	...	...	...	...	23	...	...	...	...	...	3	...	...	...
45 +,	9	...	7	...	2	...	11	...	6	...	11	...	30	...	...	...	...	...	7	...	12	...	...	...	...	...	...	...	27	...	...	...	...	...	3	...	...	...
Total,	25	...	18	...	9	...	34	...	16	...	46	...	105	...	...	...	...	...	18	...	41	...	...	...	...	...	...	...	94	...	...	...	...	...	11	...	...	...

SHIELDHALL FEVER HOSPITAL.

During the year 1,119 patients passed through the hospital, a decrease of 35, as compared with the previous twelve months. The general death-rate was 11·4 per cent., as compared with 8·3 per cent., an increase due partly to the greater proportion of pneumonia cases, and partly to the severity of the measles epidemic of last winter.

There were three cases of infectious disease among members of the staff, two nurses contracting scarlatina and one diphtheria. As usual, measures have been taken to protect susceptible nurses against diphtheria by injection of the toxin-antitoxin mixture, but two or three months elapse before immunity becomes established.

The work of the Aural Surgeon continues to justify itself, and may be tabulated as follows :—

Disease.	No. of Patients.	Operations.
Scarlatina, ...	32	12
Other Diseases, ...	9	3
	41	15

Total attendance on patients, 105.

Scarlet Fever.—314 patients were treated. The only severe infections were observed early in the year, when there were four deaths. This gives the fairly high mortality rate of 1·3 per cent.; but two of the deaths, while occurring in scarlatina cases, may be attributed more accurately to pneumonia and empyema and to advanced cardiac disease respectively. A comparatively rare event was the admission of a patient of 63 years. The treatment of discharges from the ears and nose by the removal, when necessary, of infected tonsils and adenoids, continues to give very good results. Of nine patients so dealt with, five showed almost immediate improvement, three made a more gradual recovery, and only one was dismissed from hospital without benefit. The results of the work of the past three years are as follows :—

	1926.	1927.	1928.
Average time of onset of ear discharge,	12th day.	16th day.	15th day of Illness.
Average duration of discharge (all cases),	40·0 days.	41·3 days.	28·1 days.
Average duration of discharge after operation, ...	14·9 „	29·1 „	14·1 „

During 1928 the simple mastoid operation was performed on three patients. Treatment by specific antitoxin is now firmly established, and the highly satisfactory results of its use noted in previous reports continue.

A small outbreak of chickenpox, which occurred in a scarlet fever ward, affords an interesting example of the relationship between that disease and Herpes zoster :—

Case.	Age.	Admitted.	Showed.	On.
A.	$3\frac{8}{12}$ years.	Aug. 13.	Herpes zoster.	Sept. 17
B.	4 „	„ 21.	Chickenpox.	Oct. 1
C.	3 „	Sept. 11.	„	„ 1
D.	$2\frac{9}{12}$ „	Aug. 31.	„	„ 2
E.	4 „	Sept. 23.	„	„ 13
F.	7 „	„ 29.	„	„ 13
G.	11 „	„ 28.	„	„ 14

It is possible that patient C came to hospital incubating varicella, but B and D could have been infected only from A.

Diphtheria.—250 patients were treated, with a mortality rate of 4·0 per cent., the lowest in the past three years. The types of the disease observed were:—faucial, 209; faucial and nasal, 9; faucial and laryngeal, 11; laryngeal, 14; bacteriological, 7. An unusual complication in an adult patient was the occurrence, in a man of 42, of extensive cancrum oris, which, in spite of radical surgical measures, resulted in death. Of the laryngeal cases, six required trachetomy, all save one making a good recovery. A seventh patient, still in hospital at the end of the year, and since dismissed well, showed remarkable vitality by recovering from the operation performed for urgent croup during her fifth month. Two convalescent carriers were successfully treated by removal of tonsils and adenoids.

Pneumonia.—368 patients. The number of pneumonia cases treated annually is rising steadily, and in 1928 the disease was more prevalent than any other. The mortality rate (18·2 per cent.) is considerably higher than that of 1927. A smaller proportion of doubtful and indefinite cases is now being received, but dismissal of many is delayed by septic skin eruptions or by chronic bronchitis. Some patients are returned to hospital at almost regular intervals, such cases being as a rule of a type more suitable for treatment in a sanatorium or county home than in an acute ward. The available number of beds is thus reduced.

Six patients, all under 5 years, suffered from empyema; all were operated on, with two deaths. Other fatal complications were pneumococcal meningitis (2 cases) and general peritonitis (1 case).

Measles.—140 cases. As mentioned in the last Report, the measles epidemic of the winter of 1927-1928 was, as far as can be judged from cases received here, of much greater severity than that of 1925-26. Thus the mortality rate for the period Jan.-March, 1928, more than doubled that of the first quarter of 1926. (28·6 per cent., as compared with 12·4.) Factors contributing to this heavy death-rate were (*a*) the low age incidence and poor physique of the patients; (*b*) the very high incidence of broncho-pneumonia, which attacked over 50 per cent. of them. Other common complications in the more recent outbreaks were laryngitis, eye infections, and skin lesions, such as pemphigus and furunculosis. Enteritis and otorrhœa were, on the other hand, relatively uncommon.

Other Diseases.—The remaining 47 cases included 16 of whooping-cough, and one each of rubella, cerebro-spinal fever, and enteric fever. Two patients, one remaining at the end of the year, suffered from acute poliomyelitis; and three from tuberculosis. Non-infectious conditions, most of them notified as scarlatina, numbered 24. In all, 49 diagnoses were revised during the year.

WILLIAM NAPIER,
Physician-Superintendent.

26th March, 1929.

SHIELDHALL HOSPITAL.—Statement of Cases Treated according to Sex.

Data Based on Dismissals and Deaths for Year 1928.

Disease.	In Hospital 1st Jan.		Admitted.		Died.		Dismissed.		Remaining in Hospital at 31st Dec.		Mortality Per Cent.		Average Residence (Days). Dismissals.		Average Residence (Days). Deaths.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Typhus,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric,	...	...	1	...	...	...	1	...	...	...	...	...	3	...	...	...
Continued and Undefined,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Smallpox,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fever,	18	15	156	172	4	...	146	164	24	23	2·7	...	42	41	21	...
Diphtheria and Memb. Croup,	18	27	113	126	5	5	106	134	20	14	4·5	3·6	41	43	24	13
Erysipelas,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cerebro-spinal Fever,	...	...	1	...	1	...	...	...	...	...	100·0	...	...	...	6	...
Ophthalmia Neonatorum,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trachoma,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lethargica Encephalitis,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Polioencephalitis,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Acute Poliomyelitis,	...	...	2	...	...	...	1	...	1	...	...	...	50	...	...	...
Acute Lobar-Pneumonia,	10	3	131	55	25	6	108	49	8	3	18·8	10·9	25	25	7	2
Acute Broncho-Pneumonia,	11	2	118	68	23	13	94	50	12	7	19·6	20·6	30	27	13	14
Malaria,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dysentery,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Relapsing Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Trench Fever,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Non-Pulmonary Tuberculosis,	...	...	1	2	...	2	1	...	...	...	...	100·0	38	...	...	65
Measles,	12	13	54	61	16	24	50	50	...	...	24·2	32·4	27	25	17	11
German Measles,	...	...	...	1	...	...	...	1	...	...	...	...	...	9	...	...
Whooping-Cough,	...	...	8	8	1	...	7	8	...	...	12·5	...	37	42	1	...
Chickenpox,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Other Affections—*e.g.*, Mumps, Vincent's Angina,	...	...	11	13	2	1	9	12	...	...	18·2	7·7	30	16	3	30
Total,	69	60	596	506	77	51	523	468	65	47	12·8	9·8	34·8	36·1	12·6	13·4

IELDHALL HOSPITAL.—STATEMENT SHOWING AGE AND SEX DISTRIBUTION OF CASES DISMISSED, AND DEATHS DURING THE YEAR 1928.

Age.	Paratyphoid B.	Typhus.	Enteric.	Puerperal.	Smallpox.	Scarlet Fever.	Diph. and Memb Croup.	Erysipelas	Cerebro-spinal Fever.	Lethargica Encephalitis.	Acute Polio-myelitis.	Acute Lobar-Pneumonia.	Acute Broncho-Pneumonia.	Malaria.	Dysentery.	Non-Pulmonary Tuberculosis.	Measles.	German Measles.	Whooping-Cough.	Chickenpox.	Other Affections.	Total.
s (including Deaths).																						
- 1	...	...	...	...	...	1	2	...	...	...	...	...	45	...	...	...	11	...	1	...	6	66
- 2	...	...	...	...	...	5	13	...	...	...	...	...	33	...	...	...	27	...	2	...	1	81
- 3	...	...	...	...	...	11	8	...	...	...	...	..	20	...	...	...	7	...	1	...	2	49
- 4	...	...	...	...	...	8	17	...	...	...	...	3	6	...	...	...	9	...	3	...	...	46
- 5	...	...	...	...	...	16	11	...	...	...	...	6	2	...	...	...	5	...	...	...	1	41
- 10	...	...	...	...	...	67	39	...	...	..	1	23	7	...	...	...	7	...	1	...	...	145
- 15	...	..	...	..	...	22	15	...	...	...	...	14	2	...	.	1	...	...	...	...	...	54
- 25	...	...	1	...	...	12	2	...	1	...	...	33	...	...	...	...	...	...	...	...	1	50
- 35	...	...	...	...	..	4	3	...	...	...	...	19	1	...	...	...	...	...	...	...	...	27
- 45	...	...	...	...	...	3	1	...	...	...	...	17	...	...	...	...	...	...	...	...	...	21
45 +	...	...	...	...	...	1	...	...	...	...	...	18	1	...	...	...	...	..	...	...	...	20
Total,	...	...	1	...	...	150	111	...	1	...	1	133	117	...	...	1	66	...	8	...	11	600
- 1	...	...	...	...	...	1	3	...	...	...	...	...	14	...	...	...	15	...	2	...	...	35
- 2	...	...	...	...	...	1	7	...	...	...	...	1	24	...	...	1	27	...	2	...	...	63
- 3	...	...	...	...	...	10	6	...	...	...	...	...	8	...	...	...	10	...	2	...	2	38
- 4	...	...	...	...	...	14	11	...	...	...	...	...	9	...	...	...	8	...	...	...	...	42
- 5	...	...	...	...	...	15	11	...	...	...	...	4	2	...	...	...	1	...	2	...	...	35
- 10	...	...	...	...	...	64	51	...	...	...	...	21	4	...	...	...	7	1	..	...	2	150
- 15	...	...	...	...	...	22	15	...	...	..	...	8	1	...	...	...	...	...	...	...	1	47
- 25	...	...	...	...	...	26	18	...	...	...	...	4	...	...	...	...	2	...	...	...	3	53
- 35	...	...	...	...	...	6	10	...	...	...	...	4	1	...	...	..	2	...	...	...	4	27
- 45	...	...	...	...	...	4	4	...	...	...	...	9	...	...	...	1	2	...	...	...	1	21
45 +	...	...	...	...	...	1	3	...	...	...	...	4	...	...	...	...	...	...	...	...	...	8
Total,	...	...	...	...	..	164	139	...	...	...	...	55	63	...	...	2	74	1	8	...	13	519
hs.																						
- 1	...	...	...	...	...	...	...	...	...	...	...	...	12	...	...	...	2	...	...	...	1	15
- 2	...	...	...	...	...	1	1	..	...	...	...	...	9	...	...	...	12	...	1	...	...	24
- 3	...	...	...	...	..	2	1	...	...	...	...	...	...	...	...	...	1	...	...	...	1	5
- 4	...	...	...	. .	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
- 5	..	...	...	...	...	...	...	...	...	...	...	1	1	...	.	...	1	...	...	...	...	3
- 10	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
- 15	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...
- 25	...	...	...	...	...	...	...	...	1	...	...	4	...	...	...	...	...	...	...	...	...	5
- 35	..	...	...	...	...	...	...	...	...	...	...	7	...	...	..	...	.	...	...	...	...	7
- 45	...	...	...	...	...	...	1	...	...	...	...	7	...	...	...	...	...	...	...	...	...	8
45 +	...	...	...	...	...	1	...	...	...	...	...	6	1	...	...	...	...	...	...	...	...	8
Total,	...	...	..	...	..	4	5	...	1	...	...	25	23	...	...	...	16	...	1	...	2	77
- 1	...	...	...	...	...	...	1	...	..	...	...		3	...	...	.	8	...	...	...	...	12
- 2	...	...	...	...	...	...	1	...	...	...	...	..	7	...	...	1	11	...	...	...	...	20
- 3	...	...	...	...	...	...	...	...	. .	...	...	..	2	...	...	...	1	...	...	...	...	3
- 4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
- 5	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
- 10	...	...	...	...	...	...	3	...	...	...	...	...	...	..	...	...	3	...	...	...	...	6
- 15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
- 25	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	1	1
- 35	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	..	...	2
- 45	...	...	...	..	...	...	...	..	...	...	...	3	...	...	...	1	1	...	...	..	...	5
45 +	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2
Total,	...	...	...	...	...	...	5	...	...	...	...	6	13	...	...	2	24	...	...	...	1	51

SHIELDHALL HOSPITAL—Table showing Alterations in Diagnosis of Ca
Dismissed and Deaths during the Year 1928.

	Originally Certified as			
Diagnosis Altered to	Diphtheria.	Scarlatina.	Measles.	Pneumo
Diphtheria,	...	1	...	2
Diphtheria and Chickenpox,	1	...	...	...
Scarlet Fever,	5	...	...	...
Scarlet Fever and Diphtheria,	...	1	...	...
Scarlet Fever and Whooping-Cough,	...	1	...	...
Measles,	...	1	...	7
Measles and Whooping-Cough,	...	...	1	...
Whooping-Cough,	...	1	...	7
German Measles,	...	1	...	...
Pneumonia,	1	...	...	...
Bronchitis,	...	1	...	...
Enteric Fever,	...	...	...	1
Enteritis,	...	...	1	...
C.S.F.,	..	...	...	1
Poliomyelitis,	...	...	...	1
Septic Abscess,	2	...	...	1
Tonsillitis,	1	2	...	...
Parotitis,	...	1	...	...
Erythema,	...	3	...	..
No apparent Disease,	...	1	3	...

ROBROYSTON TUBERCULOSIS HOSPITAL.

Notes on Surgical Tables.

GLANDS.

Surgical Table No. 1.—Scarcely any remarks are now necessary about this group, as only nine patients suffering from glandular tuberculosis have been dismissed during the year. The number has steadily fallen, as was commented upon in the 1927 Report, from 87 in 1923. All of these nine cases were late ones. The reasons for this diminution in numbers are fully discussed in last year's Report, and need not be entered upon again. Suffice it to say that in future we do not anticipate that any large number of beds will be necessary for the treatment of tuberculous cervical adenitis.

SPINE.

Surgical Table No. 2.—Forty-eight cases were dismissed or died during the year. Of these 50 per cent. had healed and consolidated lesions, as compared with 47·5 per cent. last year and 34·6 per cent. in 1923. There were only five deaths. This 50 per cent. does not represent a fair index of the results because 10 patients were sent out " for other reasons " (see table), that is, the patients were transferred to one of the infectious diseases hospitals on account of scarlet fever or diphtheria, and all of these would be readmitted later to continue treatment for the spinal disease. It will be noticed that 30 cases were uncomplicated by abscess or sinus formation : thus cases are being admitted at a more hopeful stage of the disease. The average duration of stay was 657 days, practically the same as it was last year. It is not anticipated that this period will be materially lessened in the near future.

BONES OTHER THAN SPINAL.

Surgical Table No. 3.—In this group of cases 15 out of a total of 23 were dismissed healed and fit for work or school. The average duration of stay has diminished from 363 days in 1927 to 278 in the present series. This figure is likely to fluctuate because the group includes a large variety of lesions from tuberculous dactylitis to tuberculosis of the cranial bones, and so the average duration of residence varies from time to time according as the different kinds of lesions preponderate.

HIP JOINT.

Surgical Table No. 4.—Only 22 cases of hip-joint disease were dismissed or died, as compared with 38 in 1927 and 50 in 1926, and of these 45·5 per cent. had healed lesions. A review of the treatment of hip-joint tuberculosis and the results obtained is given later in the summary of a paper by Mr. James Taylor, and need not be referred to further here.

JOINTS OTHER THAN HIP.

Surgical Table No. 5.—Twenty-five cases are included in this year's dismissals, as compared with 57 in 1927. 68 per cent. were dismissed healed. This figure varies little from year to year, although the functional results are improving. The average duration of stay in hospital was 524 days.

ABDOMINAL TUBERCULOSIS.

Surgical Table No. 6.—There has been practically no change in the numbers of patients suffering from abdominal tuberculosis discharged during the year. Thirty-five, or 48·6 per cent., were discharged as fit. This is a decrease from 57·8 per cent. last year.

TREATMENT.

Practically no innovations have been made during the year in treating the non-pulmonary forms of tuberculosis.

Our spinal cases continue to be treated mainly in two ways. For the great majority we still use the method of partial immobilisation of Calot, the Berck tray, on which the patient is kept hyperextended over a block as long as there is any evidence of activity of the disease. Others are completely immobilised on the spinal carriage of Pugh of Carshalton. Our aim is not so much to reduce deformity by separating collapsed vertebrae, as to produce such compensatory lordosis above and below the lesion that the resultant, when the patient is dressed and about, is a straight spine.

The treatment of hip-joint disease is fully described in Mr. Taylor's paper, which follows.

Artificial Light Therapy.—We have continued to make use of artificial light therapy in a limited number of cases as in previous years. The carbon-arc lamps for general irradiation have been chiefly used. During 1928, 188 patients were irradiated, the total number of exposures given being 14,407. These figures show a falling off from the previous year. This is due to the fact that treatment had to be suspended more frequently than usual because of outbreaks of infectious diseases, especially scarlet fever and diphtheria, in some of the wards.

Aspirations and Injections.—As in former years where lesions were complicated by cold abscesses these have been aspirated so as to preserve intact the superficial tissues and thus avoid secondary pyogenic infection. Into some of the abscesses modifying fluids were injected, chiefly the preparation of iodoform, &c., recommended by Calot of Berck. Sinuses were treated by paste injections of similar composition. During the year 1,445 aspirations were performed: 388 fluid and 532 paste injections were given. The number of aspirations performed has fallen from over 2,000 in previous years. This is in part due to the earlier admission of cases, and in part to a drier type of caries.

Operations.—The indications for operative treatment in tuberculous disease have been adequately dealt with in former reports. During the year 51 major and 48 minor operations were performed.

Appliances.—During the year 274 plaster and 122 certalmid appliances were made for patients suffering from bone and joint tuberculosis.

Radiology.—Radiographic control of treatment continues to play a very important role, and in 1928, 863 patients were examined by x-rays, 1,523 radiograms being taken.

The following is a summary of an article by Mr. James Taylor, Visiting Surgeon, published in September, 1928, on the treatment of tuberculous disease of the hip joint :—

Of non-pulmonary tuberculous lesions, hip-joint disease is one of the most serious, and in the past has been the cause of serious crippling and often death.

To ascertain the results of treatment as inaugurated in recent years and based on that carried out at Berk-Sur-Mer and later by Sir Henry Gauvain at Alton, an analysis of (a particular group of) cases treated to a finish during six years (1922-1927) was made and details are as follows :—

Year.	Cases treated to a finish.	Died.	Percentage of Movable Joints.	Average Shortening.
1922-3-4	43	15	37	1·5 inches.
1925	23	2	52	0·83 ,,
*1926	38	5	42	0·92 ,,
†1927	33	4	58	0·43 ,,

* Four cases had 2¼ inches, 3 inches, 3 inches, and 4½ inches shortening respectively.

† Seventeen of these cases were under 13 years. Their percentage of movable joints was 62 per cent., and the average shortening 0.31 inches.

This shows that in the past three years, 1925 till 1927, the proportion of deaths was very much lower, and also that there was very much less crippling in cases that recovered than in the preceding years, 1922 till 1924.

While more efficient treatment has certainly contributed to this improvement, the admission of cases at an earlier stage of the disease has also considerably affected the results.

The following description serves to illustrate the protracted course of the treatment which may be divided into general and orthopædic. The essential part of the former is the removal of the patient from the overcrowded town dwelling to a hospital designed for open-air treatment. Here the patient actually spends the whole twenty-four hours on a verandah in the summer, and in well-ventilated wards during the winter. Even during this part of the year if the weather is dry he is moved out into the open in the day time. In summer carefully graduated sun baths are given and in a few cases artificial sunlight is used, but as transport to and from the lamps interferes with the immobilisation of the joint, only a very small proportion have been treated in this way.

These methods are adopted to increase the patient's resistance. The orthopædic treatment is that of partial immobilisation which is adopted at most of the hospitals for tuberculosis in this country.

If the patient is admitted in the early stage of the disease before any deformity has developed, he is put on a fracture bed, and extension applied to the diseased limb, while to prevent the tilting of the pelvis, which a prolonged pull on one leg is apt to produce, a Liston's long splint is applied to the healthy side. During the period of extension the limb is abducted through an angle of 30, because a pull in this direction is the most satisfactory for relieving the pressure in the acetabulum, and, more important still, because this is the optimum position for the limb in the event of ankylosis taking place. This is not so likely to occur in the cases being dealt with at present, though it is often the termination in the group whose treatment is next referred to.

In most of the cases which are admitted for treatment at this early stage a movable hip is the end result, but if the ankylosis does occur it is in those patients who have had destructive disease of the bone, and therefore true shortening. This shortening is compensated for, if the leg is fixed in abduction, by the tilting down of the pelvis which takes place when the limbs are made parallel for walking. The extension is maintained for six months after all pain and tenderness have disappeared from the joint. This usually takes two to four months, so that by the end of eight to ten months the patient is put up in a plaster splint, and allowed to walk on crutches, with a patten on the foot of the healthy limb.

Unfortunately, many children have the hip fixed in a deformed position on admission, and it is necessary not only to immobilise the joint, but to correct the deformity. In many of the cases the abnormal position is maintained by the spasm of the muscles in their attempt to prevent any movement in the painful joint, and in such cases the deformity can be corrected by means of extension similar to that already described. This must, however, be applied in the line of the deformity, and for this purpose a special extension apparatus is used, which is universal in its application, and is suitable for exerting a pull in almost any position of the limb.

When the deformity has thus been corrected a plaster splint is applied, and the patient allowed out of bed. Before he leaves hospital, the plaster case is replaced by a certalmid splint, which is made on a plaster cast of the patient, and consists of ten to twenty layers of muslin, soaked in a suspension of certalmid powder in water.

A proportion of cases resist correction by the above method. When these patients have improved in health and have been completely relieved of pain by rest in extension, the deformity is corrected by manipulation under an anæsthetic, either with or without tenotomy of the adductor and flexor muscles. A plaster case is applied, and after two months' rest in this the patient is allowed to get about on crutches.

The accompanying table shows that the death-rate varies with the number of cases that are admitted suffering from sinuses. If an abscess develops in hospital it is usually possible to prevent it breaking down, by careful aspiration and injection of modifying fluids, but in many of the patients who are admitted with abscesses this is impossible, because the abscess wall has become so thin that it gives way in spite of the most careful treatment.

Year	Cases treated to a finish.	Died.	Admitted with abscess.	Admitted with sinus.
1925.	23	2	4	5
1926.	38	5	5	7
1927.	33	4	2	6

DENTAL TREATMENT.

During the year Dr. Hugh MacKay, L.D.S., made 46 visits, and the dental work carried out is as follows:—

Fillings.	Amalgam, ...	132
	Cement, ...	52
Dressings and temporary fillings, ...		15
Extractions with local anæsthetic, ...		390
Extractions with general anæsthetic, ...		100
Scaling, ...		200
Pulpitis cases, ...		5
Lower dentures, ...		1
Repairing lower dentures, ...		1
Examinations, ...		200(Approx.)

LABORATORY.

Examinations have been carried out as follows:—

Sputum for tubercle bacillus, ...	1,014
Throat cultures for diphtheria, ...	721
Urines (microscopical investigations, cultures, &c.),	165
Cultures from sinuses, ...	29
Sections, ...	8
Miscellaneous, ...	71

EDUCATION.

The Education Authority of Glasgow continued to provide four teachers for the education of children. The average number of children on the rolls was 125, and the average daily number receiving tuition 104.

During the year 29 non-tuberculous patients were treated, and the following statement indicates the nature of their disease:—

Disease.	Number of Cases.
Non-tuberculous infective arthritis, ...	2
Non-tuberculous chronic mastoiditis, ...	1
Congenital syphilis, ...	4
Osteo-arthritis, ...	1
Osteitis fibrosa, ...	1

Disease.	Number of cases.
Disseminated sclerosis,	2
Syphilis of knee joint,	1
Carcinoma of lungs and vertebrae,	1
Subacute bronchitis,	1
Gastroenteritis,	1
Spondylitis deformans,	1
Epidermoid carcinoma of cheek,	1
No abnormality found (under observation for tubercular peritonitis),	2
Malignant papilloadenoma of neck,	1
Empyema with discharging sinus,	1
Carcinoma of rectum,	1
No abnormality found (under observation for tubercular disease of spine),	1
Mitral stenosis with bronchitis,	1
Rickets,	1
Anaemia gravis (of childhood),	1
Congenital abnormality of kidney,	1
Amoebic dysentery (with hepatic abscess),	1
Apical catarrh (due to hypertrophic tonsils and adenoids),	1

The following table indicates the state of nutrition of the various groups of tubercular patients on admission :—

Disease.	Good.	Fair.	Poor.	Total.
Pulmonary Tuberculosis—				
Early,	4	12	10	26
Intermediate,	5	21	12	38
Advanced,	7	19	76	102
Non-Tuberculous,	8	11	10	29
Other Forms of Tuberculosis—				
Spine,	13	27	8	48
Glands,	5	3	1	9
Bones other than spinal,	7	15	1	23
Hip joint,	8	7	7	22
Joints other than hip,	30	32	13	75
Abdomen,	22	8	42	72
Multiple,	9	6	36	51
Genito-Urinary and miscellaneous,	2	8	5	15
Totals,	120	169	221	510

JOHN WATSON,
Physician-Superintendent.

2nd May, 1929.

ROBROYSTON HOSPITAL.—TABLE SHOWING CASES DISMISSED AND DEATHS DURING THE YEAR 1928, AND THE AVERAGE RESIDENCE.

Disease.	Number of Cases Dismissed.	Number of Deaths.	Duration of Residence.							Average.
			– 30	– 50	– 100	– 150 Days.	– 200	– 300	+ 300	
Pulmonary Tuberculosis—										
Early, - - - - -	25	1	...	1	6	4	2	5	8	212
Intermediate, - - -	37	1	3	4	6	7	1	7	10	181
Advanced, - - - -	51	51	17	15	17	15	9	6	23	182
Diagnosis not confirmed, -	4	2	3	2	1	...	...	...	...	36
Other Forms of Tuberculosis—										
Glands, - - - - -	8	1	1	...	1	3	1	...	3	282
Spine, - - - - -	43	5	5	...	2	2	2	3	34	657
Bones other than spine, -	22	1	1	...	4	4	2	3	9	278
Hip Joint, - - - -	20	2	...	2	3	1	...	...	16	603
Joints other than hip, -	71	4	3	2	5	3	11	7	44	524
Abdomen, - - - -	58	14	8	3	10	16	5	13	17	210
Multiple. - - - -	40	11	6	3	2	4	1	7	28	611
Genito-Urinary, - - -	9	1	3	...	2	3	1	1	...	91
Miscellaneous, - - -	3	2	3	1	...	...	...	...	1	203
Diagnosis not confirmed, -	19	4	4	5	3	2	3	3	3	139
Total, - - - -	410	100	57	38	62	64	38	55	196	344
	510									

ROBROYSTON HOSPITAL.—PULMONARY TUBERCULOSIS.—TABLE SHOWING STAGE OF DISEASE, AGE, RESULT OF TREATMENT, &c., OF PATIENTS DISMISSED DURING 1928.

	Not Classified Further.				Result of Treatment.												Complications.				Condition on or Reason for Dismissal.										Result of Sputum Examination.									
Ages.	Less than 4 Weeks Residence.		Deaths among these.		Arrested.		Much Improved.		Improved.		Not Improved.		Died.		Total.		Tubercular.		Other.		Fit for Work or School.		Unfit.		Left Own Accord or Removed by Parents.		Other Reasons.		Transferred to Other Institutions.		+Admitted. +Dismissed.		+Admitted. −Dismissed.		−Admitted. +Dismissed.		−Admitted. −Dismissed.		No Sputum.	
Early Cases—	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
− 5,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 10,	...	...	...	...	2	2	1	3	...	...	...	...	...	...	3	5	1	...	...	1	3	1	...	...	...	2	...	...	...	2	...	...	1	...	...	...	...	...	2	5
− 15,	...	...	...	...	2	3	2	2	1	...	...	...	...	...	5	5	2	1	...	1	5	1	...	...	...	...	...	...	...	4	...	...	...	...	...	...	3	2	2	3
− 25,	...	...	...	...	1	...	1	2	...	...	...	...	...	1	2	3	...	...	1	1	2	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	2	...	...	3
− 35,	...	...	...	...	1	...	...	...	1	...	...	...	...	...	2	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...
− 45,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
+ 45,	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Total,	...	...	...	...	6	5	4	7	2	1	...	...	...	1	12	14	4	2	1	3	11	3	...	...	...	4	1	...	...	6	...	...	1	...	...	...	6	3	5	11
Intermediate Cases—																																								
− 5,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 10,	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	2
− 15,	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	3	...	1	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	3
− 25,	1	...	...	...	1	1	4	7	...	...	...	2	...	1	5	11	5	3	...	2	3	3	1	...	...	5	...	...	1	2	...	4	3	2	...	...	2	3	...	2
− 35,	1	1	...	...	...	...	3	2	...	1	1	...	...	...	4	3	2	...	2	3	1	1	1	...	1	2	...	...	1	...	1	...	2	1	...	...	1	2	...	...
− 45,	...	...	...	...	...	1	1	2	1	1	...	...	...	...	2	4	1	...	1	2	...	2	...	...	2	1	...	...	...	1	1	1	1	...	...	...	...	2	...	1
+ 45,	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Total,	2	1	...	...	1	2	8	13	1	5	1	3	...	1	11	24	8	6	3	7	4	6	2	...	3	12	...	...	2	5	2	5	6	3	...	...	3	8	...	8
Advanced Cases—																																								
− 5,	3	...	1	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
− 10,	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
− 15,	...	...	...	...	...	...	...	...	...	1	...	1	1	1	1	3	1	1	...	2	...	...	...	...	...	2	...	...	...	...	1	2	...	...	...	...	...	1	...	...
− 25,	3	5	1	2	...	...	2	3	...	2	2	4	4	11	8	20	5	6	...	5	1	...	1	...	2	8	...	...	...	1	6	16	2	...	...	1	...	1	...	2
− 35,	1	1	...	1	...	...	1	3	1	1	1	5	6	5	9	14	7	5	1	2	1	...	2	...	...	8	...	...	...	1	5	9	2	2	1	1	1	1	...	1
− 45,	2	1	2	...	...	...	1	...	3	1	...	2	5	1	9	4	5	...	1	2	1	...	...	...	...	3	1	...	2	...	6	3	...	1	...	...	3	...	...	...
+ 45,	1	...	1	...	...	...	3	...	3	2	...	...	6	1	12	3	6	1	2	1	3	...	1	1	2	1	...	...	...	...	9	1	3	2	...	...	...	...	...	...
Total,	10	7	5	3	...	...	7	6	7	7	3	12	24	19	41	44	26	13	4	12	6	...	4	1	4	22	1	...	2	2	27	31	7	5	1	2	4	3	2	3

SURGICAL CASES: TABLE No. 1. GLANDS.

Age Groups	CONDITION ON ADMISSION			Total	TREATMENT				Total	CONDITION ON DISMISSAL				Total	DISMISSED					Total	COMPLICATIONS	
	Early	Intermediate	Late		Operation	Aspiration	Tuberculin	Other		Well	Improved	Healed	Discharging		Fit	Unfit	At own or Parents' request	For Other Reasons	Died		Tubercular	Other
– 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
– 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...
– 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
– 5	...	...	1	1	1	...	...	...	1	1	...	...	...	1	1	...	...	...	...	1	...	...
–10	...	...	3	3	1	...	...	2	3	1	...	2	...	3	3	...	...	...	...	3	...	...
–15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
–20	...	...	1	1	1	...	...	..	1	...	...	1	...	1	1	...	...	...	...	1	...	1
–25	...	...	2	2	...	1	...	1	2	...	...	1	...	1	1	...	...	...	1	2	1	1
–35	...	...	1	1	...	...	...	1	1	...	...	...	1	1	...	1	...	...	...	1	..	1
–45	...	...	1	1	...	...	...	1	1	...	...	...	1	1	...	1	...	...	...	1	1	...
45 +	...	..	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...
Total	...	..	9	9	3	1	...	5	9	2	...	4	2	8	6	2	...	...	1	9	2	3

SURGICAL CASES: TABLE No. 2. SPINE.

Age Groups	Condition on Admission					Deformity on Admission	Treatment					Total	Deformity on Dismissal or Death	Condition on Dismissal			Total	Dismissed					Total	Complications	
	Abscess	Sinus	Abscess and Sinus	No Abscess or Sinus	Total		Operation	Aspiration	Aspiration and Injection	Appliances	Other			Healed, including Arrested	Improved	Not Improved		Fit	Unfit	At Own or Parents' Request	For other Reasons	Died		Tubercular	Other
– 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
– 3	...	...	...	5	5	4	...	...	...	2	3	5	4	2	3	...	5	2	...	...	3	...	5	1	4
– 4	...	...	...	3	3	3	...	...	...	1	2	3	3	1	1	...	2	1	...	...	1	1	3	1	1
– 5	2	...	...	3	5	5	...	1	1	2	1	5	5	3	1	1	5	3	...	1	1	...	5	...	1
–10	1	1	...	7	9	8	...	1	...	6	2	9	8	6	3	...	9	5	2	...	2	...	9	1	6
–15	2	...	...	2	4	4	...	2	...	1	1	4	4	3	...	1	4	3	...	1	...	...	4	1	1
–20	...	...	1	2	3	3	...	...	1	2	...	3	3	3	...	...	3	3	...	...	...	...	3	...	...
–25	2	1	1	3	7	7	...	1	1	...	5	7	6	2	1	2	5	3	...	2	...	2	7	4	...
–35	1	...	...	2	3	3	...	1	...	2	...	3	3	2	1	...	3	2	...	1	...	...	3	...	...
–45	3	...	...	1	4	2	...	1	2	1	...	4	2	1	2	1	4	1	...	2	1	...	4	1	...
45+	2	.	1	2	5	5	...	3	..	...	2	5	5	...	3	...	3	1	...	...	2	2	5	2	1
Total	13	2	3	30	48	44	...	10	5	17	16	48	43	23	15	5	43	24	2	7	10	5	48	11	14

Surgical Cases: Table No. 3. **BONES other than Spinal.**

Age Groups	Condition on Admission					Deformity on Admission	Treatment					Total	Deformity on Dismissal	Condition on Dismissal			Total	Dismissed					Total	Complications	
	Abscess	Sinus	Ulceration	No Abscess, Sinus or Ulceration	Total		Operation	Aspiration	Aspiration and Injection	Appliances	Other			Healed, including Arrested	Improved	Not Improved		Fit	Unfit	At Own or Parents' request	For other Reasons	Died		Tubercular	Other
– 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
– 2	...	1	...	1	2	...	1	...	...	1	...	2	...	...	...	2	2	...	...	1	...	1	2	1	...
– 3	1	...	...	...	1	...	...	1	...	...	...	1	...	1	...	...	1	1	...	...	...	...	1	...	...
– 4	...	...	...	1	1	...	...	...	...	...	1	1	...	1	...	...	1	1	...	...	...	...	1	1	...
– 5	...	2	...	...	2	1	...	...	...	2	...	2	...	1	1	...	2	1	...	1	...	...	2	...	...
–10	...	2	...	2	4	...	...	...	...	2	2	4	...	4	...	...	4	3	1	...	...	...	4	...	1
–15	2	4	...	1	7	3	2	...	...	2	3	7	1	5	2	...	7	6	...	...	1	...	7	4	1
–20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
–25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
–35	...	2	...	...	2	...	1	...	...	...	1	2	...	2	...	...	2	2	...	...	...	...	2	1	1
–45	...	1	...	1	2	...	1	...	...	1	...	2	...	1	1	...	2	1	...	1	...	...	2	1	...
45 +	...	2	...	...	2	...	1	...	...	1	...	2	...	...	2	...	2	...	2	...	...	...	2	...	...
Total	3	14	...	6	23	4	6	1	...	9	7	23	1	15	6	2	23	15	3	3	1	1	23	8	3

SURGICAL CASES: TABLE No. 4. HIP JOINT.

Age Groups	CONDITION ON ADMISSION					TREATMENT						DEFORMITY ON DISMISSAL		CONDITION ON DISMISSAL				DISMISSED						COMPLICATIONS	
	Abscess	Sinus	No Abscess or Sinus	Total	Deformity on Admission	Operation	Aspiration	Injection	Appliances	Other	Total	Improved	Not Improved	Healed, including Arrested	Improved	Not Improved	Total	Fit	Unfit	At Own or Parents' Request	For other Reasons	Died	Total	Tubercular	Other
− 2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...
− 3	...	1	1	2	2	1	...	...	1	...	2	...	2	1	...	1	2	1	...	...	1	...	2	...	1
− 4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
− 5	...	...	3	3	2	...	...	...	3	...	3	2	...	2	1	...	3	2	...	...	1	...	3	...	1
−10	...	2	5	7	6	2	...	...	4	1	7	5	1	4	2	1	7	4	1	...	2	...	7	1	2
−15	1	2	...	3	3	...	1	1	...		3	...	3	...	...	2	2	...	2	...	...	1	3	3	...
−20	...	1	3	4	3	...	...	1	3	...	4	2	1	3	...	1	4	2	2	...	...	...	4	1	2
−25	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
−35	...	3	...	3	3	1	...	1	...	1	3	1	2	...	1	1	2	...	1	1	...	1	3	2	1
−45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
45+	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	1	9	12	22	19	4	1	3	11	3	22	10	9	10	4	6	20	9	6	1	4	2	22	7	7

SURGICAL CASES: TABLE NO. 5.

JOINTS other than Hip.

Age Groups	Condition on Admission				Deformity on Admission	Treatment					Total	Deformity on Dismissal		Condition on Dismissal			Total	Dismissed						Complications	
	Abscess	Sinus	No Abscess or Sinus	Total		Operation	Aspiration	Injection	Appliances	Other		Improved	Not Improved	Healed, including Arrested	Improved	Not Improved		Fit	Unfit	At Own or Parents' request	For other Reasons	Died	Total	Tubercular	Other
– 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
– 2	1	...	1	2	2	...	1	...	1	...	2	2	...	1	1	..	2	1	...	...	1	...	2	...	1
– 3	...	1	...	1	1	1	...	...	...	...	1	1	...	...	1	...	1	...	...	1	...	...	1	1	...
– 4	2	1	1	4	4	...	2	1	...	1	4	3	1	1	2	1	4	1	...	2	1	...	4	...	1
– 5	1	1	3	5	2	...	1	1	3	...	5	2	...	3	2	...	5	3	...	1	1	...	5	.	...
– 10	1	4	13	18	10	3	...	...	7	8	18	8	2	12	4	1	17	12	...	...	5	1	18	1	5
– 15	2	5	8	15	7	1	1	...	6	7	15	6	1	13	1	...	14	13	...	..	1	1	15	3	1
– 20	5	9	5	19	12	4	3	2	6	4	19	10	2	14	2	2	18	14	2	...	2	1	19	3	5
– 25	...	2	1	3	2	1	...	...	1	1	3	2	...	2	1	...	3	2	...	...	1	...	3	...	...
– 35	...	1	2	3	1	...	...	...	2	1	3	...	1	2	...	1	3	2	...	1	..	...	3	1	...
35 +	...	2	3	5	3	2	...	...	2	1	5	2	1	3	1	...	4	3	...	1	...	1	5	...	1
Total	12	26	37	75	44	12	8	4	28	23	75	36	8	51	15	5	71	51	2	6	12	4	75	9	14

SURGICAL CASES: TABLE No. 6. ABDOMINAL TUBERCULOSIS.

Age Groups	Nature of Disease				Condition on Admission								Treatment			Condition on Dismissal					Dismissed						Complications	
	Acute	Sub-acute	Chronic	Total	Distension	Gland Masses	Distension and Glands	Distension and Fluid	Diarrhœa	Obstruction	Other	Total	Operation	General, including Heliotherapy	Total	Arrested	Much Improved	Improved	Not Improved	Total	Fit	Unfit	At Own or Parents' request	For Other Reasons	Died	Total	Tubercular	Other
– 1	..	...	1	1	1	...	...	...	...	...	...	1	...	1	1	...	...	1	...	1	...	...	...	1	...	1	...	1
– 2	3	...	3	6	2	2	..	1	1	...	...	6	...	6	6	4	...	...	...	4	4	...	...	...	2	6	...	2
3	1	...	2	3	2	1	..	...	...	...	...	3	...	3	3	...	2	...	1	3	2	...	1	...	...	3	1	...
– 4	1	3	4	8	3	...	2	1	2	...	...	8	...	8	8	3	2	...	2	7	5	...	2	...	1	8	...	1
– 5	...	...	3	3	2	1	...	...	...	...	...	3	1	2	3	2	...	...	...	2	2	...	...	...	1	3	...	1
– 10	1	3	16	20	5	6	2	4	3	...	...	20	...	20	20	10	5	3	1	19	14	1	2	2	1	20	5	1
– 15	...	3	6	9	4	1	2	...	1	1	...	9	1	8	9	3	1	1	4	9	3	...	4	2	...	9	1	...
– 20	1	4	5	10	2	3	1	1	1	...	2	10	2	8	10	1	2	2	1	6	2	1	1	2	4	10	3	1
– 25	2	1	5	8	2	4	...	...	1	1	...	8	2	6	8	3	...	1	2	6	3	1	1	1	2	8	1	1
– 35	...	1	2	3	...	...	...	...	...	2	1	3	1	2	3	...	...	...	1	1	...	...	...	1	2	3	1	...
– 45	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...
45 +	...	...	1	1	...	1	...	...	...	...	...	1	...	1	1	...	...	...	...	...	...	...	...	...	1	1	...	...
Total	9	15	48	72	23	19	7	7	9	4	3	72	7	65	72	26	12	8	12	58	35	3	11	9	14	72	12	8

Surgical Cases: Table No. 7. MULTIPLE LESIONS.

Age Groups	Site of Principal Lesion						Total	Condition on Admission					Total	Treatment				Total	Condition on Dismissal			Total	Dismissed					Total	Complications	
	Glands	Spine	Other Bones	Hip Joints	Other Joints	Abdomen		Sinus	Abscess	Sinus and Abscess	Ulceration	No Sinus, Abscess or Ulcer		Operation	Aspiration and Injection	Appliances	Other		Healed, including Arrested	Improved	Not Improved		Fit	Unfit	At Own or Parents' request	For Other Reasons	Died		Tubercular	Other
– 1	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
– 2	...	...	5	...	...	...	5	2	1	2	...	...	5	1	2	...	2	5	2	1	1	4	2	...	...	2	1	5	3	2
– 3	...	...	1	...	...	1	2	1	...	...	...	1	2	...	...	...	2	2	...	1	...	1	1	...	...	...	1	2	2	...
– 4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
– 5	1	1	2	...	1	...	5	...	2	3	...	...	5	...	5	...	...	5	3	1	1	5	3	...	...	2	...	5	3	2
– 10	...	1	...	1	5	1	8	5	...	1	...	2	8	1	2	3	2	8	4	2	1	7	4	...	1	2	1	8	6	2
– 15	...	...	1	1	5	1	8	2	...	4	...	2	8	3	1	1	3	8	2	2	2	6	2	3	...	1	2	8	7	1
– 20	...	3	3	2	...	...	8	3	3	2	...	...	8	1	2	3	2	8	6	...	...	6	6	...	...	..	2	8	6	...
– 25	...	1	2	3	2	...	8	2	...	5	...	1	8	2	3	...	3	8	2	2	3	7	2	2	3	...	1	8	7	1
– 35	1	1	...	...	...	...	2	1	...	1	...	...	2	1	...	...	1	2	...	1	1	2	...	1	...	1	...	2	2	..
– 45	1	...	...	...	...	2	3	1	...	1	...	1	3	...	...	...	3	3	...	1	...	1	...	...	1	...	2	3	3	...
45 +	...	...	1	...	1	...	2	1	1	...	...	...	2	1	1	...	...	2	...	...	1	1	...	...	...	1	1	2	1	1
Total	3	7	15	7	14	5	51	18	7	19	...	7	51	10	16	7	18	51	19	11	10	40	20	6	5	9	11	51	40	9

SURGICAL CASES: TABLE No. 8. GENITO-URINARY and MISCELLANEOUS.

Age Groups	Localisation of Disease				Treatment				Condition on Dismissal				Dismissed						Complications	
	Genito-Urinary	Skin	Ear	Total	Operation	Tuberculin	General	Total	Arrested	Improved	Not Improved	Total	Fit	Unfit	At Own or Parents' request	For other Reasons	Died	Total	Tubercular	Other
– 1 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
– 2 ...	...	...	1	1	...	...	1	1	...	...	...	...	...	...	...	...	1	1	1	...
– 3 ..	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...
– 4 ...	1	...	1	2	...	...	2	2	...	...	1	1	...	...	...	1	1	2	1	1
– 5 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
–10 ...	2	...	...	2	1	...	1	2	...	1	1	2	1	1	...	...	...	2	...	...
–15 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
–20 ...	1	3	...	4	...	...	4	4	2	1	1	4	2	...	1	1	...	4	1	...
–25 ...	1	...	...	1	...	...	1	1	...	1	...	1	...	...	1	...	...	1	...	...
–35 ...	2	...	...	2	1	...	1	2	...	1	1	2	...	...	2	...	...	2	...	...
–45 ...	1	...	...	1	1	...	...	1	...	1	...	1	...	...	1	...	...	1	...	...
45+ ...	2	...	...	2	...	...	2	2	...	...	1	1	...	...	1	...	1	2	...	...
Total ...	10	3	2	15	3	...	12	15	2	5	5	12	3	1	6	2	3	15	3	1

BELLEFIELD SANATORIUM, LANARK.

During the year 1928 all possible accommodation for the treatment of cases of pulmonary tuberculosis was made full use of, as in former years, at this Sanatorium.

113 cases showing, with the exception of 2, some definite evidence of pulmonary involvement of some degree were dealt with, a decrease of 6, as compared with the number treated during 1927, due to the loss of Chalet accommodation previously available.

As formerly, the definitely established type of case continued to preponderate among those admitted for treatment, *i.e.*, the type of case where the disease was well established, of definite extent, and essentially chronic. On the whole it may be said that much benefit accrued to those of this type consequent on a period of treatment. Their capacity to resist was in many cases very considerably strengthened, and their general condition showed decided improvement. The return, however, to their customary environment, as must of necessity follow, is more than likely to be followed, sooner or later, by a breaking down of the established resistance. Each succeeding period of treatment must prove to be more protracted and less likely to prove beneficial. They are all in the nature of potential hospital cases.

An increased number of so-called early cases passed through the Sanatorium. Although no positive assertion is made that, in any one case, the disease was definitely arrested consequent on the treatment given, it may be said that the majority could be assured of at least a reasonable measure of good health for some time to come.

Twenty-three children were treated during the period under review. All, with few exceptions, improved markedly during their stay. It is considered possible that Sanatorium treatment would not be necessary in many of the cases dealt with did a reasonable understanding and appreciation of what is due to a child exist in the minds of those immediately responsible. In two of the cases among the children the lesions were essentially abdominal and glandular, not pulmonary as far as was appreciated.

The number of advanced cases requiring to be dealt with throughout the year was much smaller than at any time previously. The remoteness of this Sanatorium from the City renders the treatment of advanced cases unsatisfactory from the point of view of those immediately concerned. Treatment was along generally accepted lines.

. The alterations and additions to existing buildings are near completion, and it is hoped that by the end of the year it will be possible to make available an additional fifty-eight beds for the accommodation of adult patients.

The poultry farm and garden have provided for the needs of the Sanatorium up to their capacity. The question of extending the poultry farm merits consideration, in view of the increased requirements in the matter of fresh eggs. The standard of health enjoyed by the staff has been very satisfactory during the year.

A. YOUNG,
Physician-Superintendent.

May, 1929.

BELLEFIELD SANATORIUM.—Tuberculosis.—Table Showing Stage of Disease, Age, Result of Treatment, &c., of Patients Dismissed during Year 1928.

	Result of Treatment						Work or School		Reasons for Dismissal			Result of Sputum Examination					Complications		
Age Group	Arrested	Much Improved	Improved	Not Improved	Died	Less than 4 weeks	Fit	Unfit	Own accord	Other reasons	Transferred	Admitted + Discharged +	Admitted + Discharged -	Admitted - Discharged -	Admitted - Discharged +	No Spit	Tubercular	Other	Totals
Early Cases—																			
- 5	...	2	1	...	...	...	3	...	...	3	...	...	..	...	...	3	1	...	3
- 10	...	5	...	1	...	...	6	...	1	5	...	...	...	2	...	4	...	...	6
- 15	...	5	2	...	...	...	7	...	1	6	...	...	...	...	...	7	...	...	7
- 20	...	8	4	...	...	...	12	...	2	10	...	...	1	4	...	7	...	...	12
- 25	...	4	6	1	...	1	10	1	3	7	1	...	2	3	...	6	...	...	11
- 35	...	2	4	1	...	...	6	1	4	2	1	...	1	4	..	2	...	1	7
Totals,	...	26	17	3	...	1	44	2	11	33	2	...	4	13	...	29	1	1	46
Intermediate Cases—																			
- 15	...	1	4	2	...	...	5	2	4	2	1	...	1	3	...	3	...	...	7
- 20	...	2	9	3	...	...	12	2	1	11	2	5	3	5	...	1	1	...	14
- 25	...	...	12	1	...	1	12	1	2	9	2	2	5	2	1	3	...	...	13
- 35	...	...	13	2	...	...	13	2	3	10	2	2	5	5	...	3	...	...	15
- 45	...	3	5	3	...	...	8	3	3	6	2	1	1	4	...	5	...	...	11
- 55	...	...	3	...	...	...	2	1	1	2	...	1	1	...	...	1	...	...	3
Totals,	...	6	46	11	...	1	52	11	14	40	9	11	16	19	1	16	1	...	63
Advanced Cases—																			
- 25	...	...	...	2	...	...	...	2	...	1	1	2	...	...	...	...	...	...	2
- 35	...	...	...	2	...	...	...	2	..	...	2	2	...	...	...	...	...	...	2
Totals,	...	...	...	4	...	...	...	4	...	1	3	4	...	...	...	...	...	...	4

BELLEFIELD SANATORIUM.—YEAR 1928.—TABLE SHOWING CASES DISMISSED, WITH DURATION OF RESIDENCE.

Class.	Number Dismissed.	Number of Deaths.	Duration of Residence—Days. -30	-50	-100	-150	-200	-300	+300
Early, - -	46	...	2	2	6	19	5	2	10
Intermediate, -	63	...	5	1	9	13	21	13	1
Advanced, -	4	...	...	1	1	...	...	1	1
Totals, -	113	...	7	4	16	32	26	16	12

TABLE SHOWING INCIDENCE IN AGE PERIODS.

Age Group.	Early.	Intermediate.	Advanced	Totals.
- 5	3	...	...	3
-10	6	...	...	6
-15	7	7	...	14
-20	12	14	...	26
-25	11	13	2	26
-35	7	15	2	24
-45	...	11	...	11
-55	...	3	...	3
Totals. - -	46	63	4	113